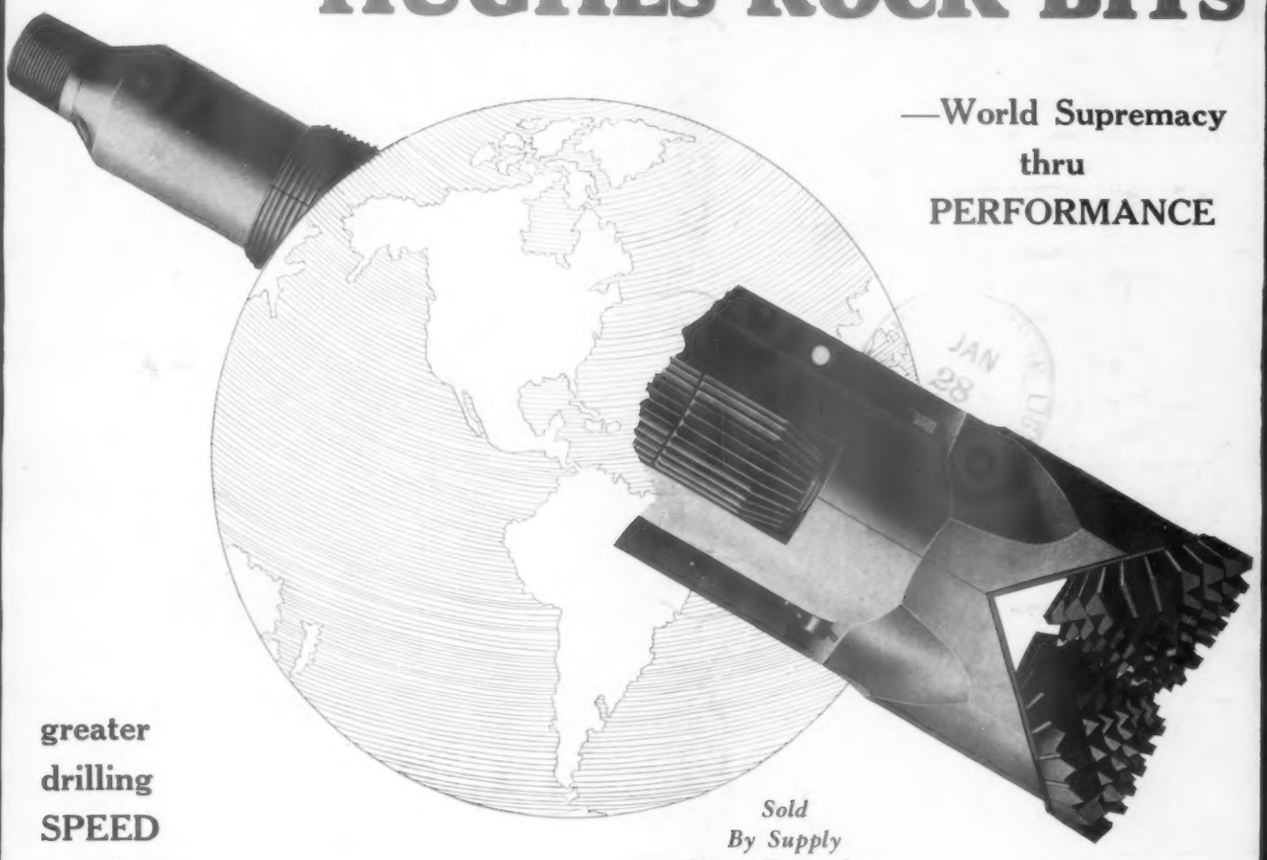
The OIL WEEKLY

10¢ A COPY

Exclusively Devoted To The Production and Transportation of Oil and Gas

January 25, 1929 **Volume 52. No. 6**

HUGHES ROCK BITS



—World Supremacy
thru
PERFORMANCE

greater
drilling
SPEED
SAFETY
and ECONOMY

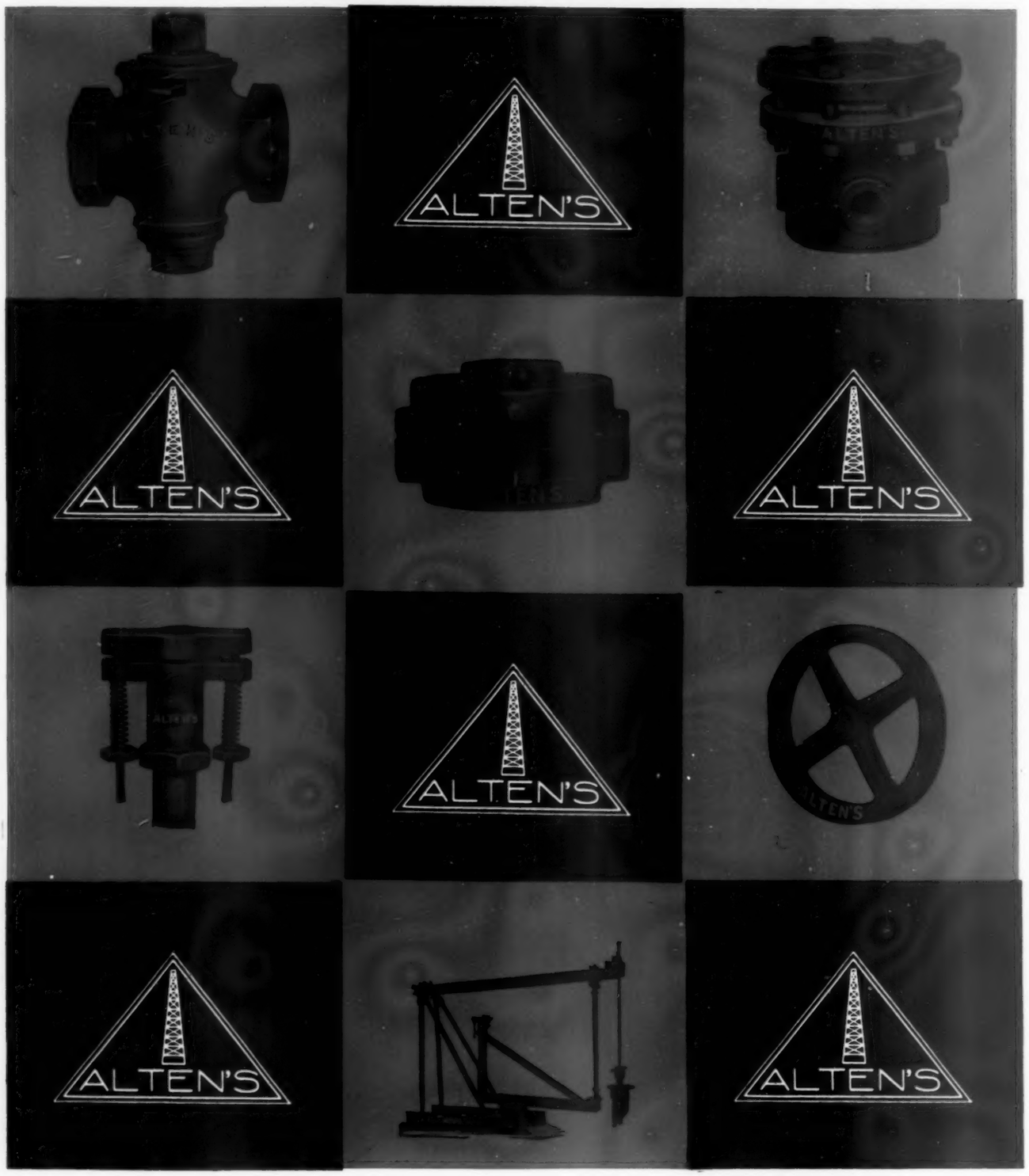
Sold
By Supply
Stores Everywhere

HUGHES TOOL COMPANY

Service Plants:
Los Angeles, Calif.
Oklahoma City, Okla.

Main Office and Plant:
HOUSTON, TEXAS

Export Office:
Woolworth Bldg.,
New York City



ALTEN'S

Foundry & Machine Works

Established in 1889 at LANCASTER, OHIO

ASK FOR ALTEN PRODUCTS AT YOUR SUPPLY HOUSE

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1897.

PORTABLE GASO PUMPING PLANTS

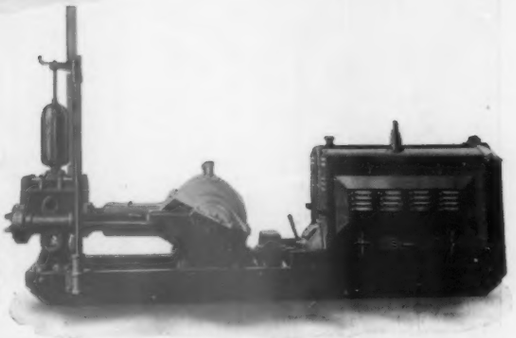
Trailer unit has four 48" 12-leaf Vanadium steel springs, wooden wheels with 36" x 5" cushion rubber tires, running on large Nikrome steel axles with Timken Tapered Roller Bearings. Can be transported at regular truck speed.

Meeting A Real Need—with Equipment of GASO Quality

GASO Portable Pumping Plants are meeting a real need for emergency, temporary and semi-permanent oil field service. They are ideal for water service for drilling operations, pick-up in case of line breaks, mudding or cementing operations, and for any other purpose when general service pumps are needed quickly.

The Pump is a heavily constructed duplex double acting power pump with interchangeable cylinder liners, with capacities ranging from 45 bbls. per hour at 800 lbs. pressure to 250 bbls. per hour at 275 lbs. pressure per square inch. Has bronze ring gear and steel worm, with double thrust ball bearings, enclosed and running in oil. The power unit is a 50 H.P. 4-cylinder Buda engine, with combination gasoline and natural gas carburetor. Ask for full details.

GASO PUMP & BURNER MFG. COMPANY
TULSA, OKLA.
Texas Office: 210 Petroleum Bldg., Fort Worth



The skidded unit is arranged for easy loading on truck, the channels being heavy and well braced. Holes drilled through each end for running 2" pipe through channels allow hauling around location by truck. Requires no foundation other than wooden sill.

GASO PUMPS
for every oil industry need

ADVERTISING INDEX ..... 21 NEWS INDEX 23

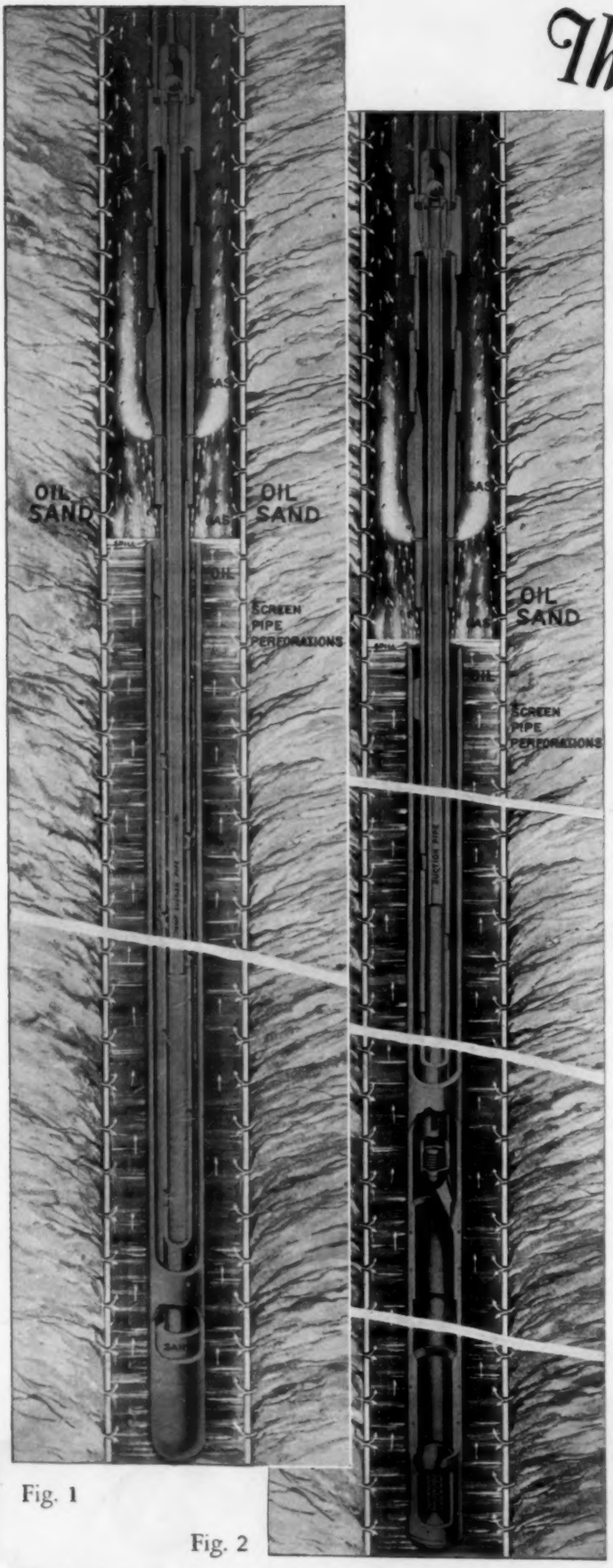


Fig. 1

Fig. 2

The D+B Carlson GAS ANCHOR *insures* highest pumping efficiency...

The D+B Carlson Gas Anchor is designed to overcome gas interference so as to insure the highest pumping capacity of each individual well. It has been subjected to every conceivable test in hundreds of wells and never has failed to increase the production of each one in amounts ranging from ten to two hundred barrels per day.

The D+B Carlson Gas Anchor is essential to maximum capacity in every well where gas interference prevails. It gives complete separation of gas from oil before the fluid enters the pump, traps the gas and eliminates pockets. It admits full volume of oil; stabilizes the fluid; increases pump efficiency; and increases both gas and oil production. Can be run in any oil string in which the working barrel will run; eliminates ball, seat and plunger troubles; can beset at high or low levels.

Patented Nos. 1,662,296 March 13, 1928 and 1,682,114 August 28, 1928. Fig 1 shows the plain type. Fig. 2 is the anchor with a Reed-Yost Dump Valve which automatically dumps the sand. Send for complete engineering data together with some very interesting performance records.

Protected by Steel

EMSCO DERRICK & EQUIPMENT COMPANY
LOS ANGELES, CALIF., HOUSTON, TEXAS-DALLAS, TEXAS
U.S.A.
EXPORT OFFICE: 150 BROADWAY
NEW YORK CITY, N.Y.
U.S.A.

EMSCO STEEL EQUIPPED WELLS ARE SAFE

True enough, the Perkins' Patents (now expired) were the starting point of the Halliburton business—but the starting point only. The marvelously efficient mixer, the patented measuring line and the expensive and specially designed truck equipment were the products, not of patent protection, but of an organization keyed to a fine sense of service. Never to have failed in an emergency is a record in which we take justifiable pride.

HALLIBURTON
OIL WELL CEMENTING COMPANY
DUNCAN, OKLAHOMA

Say you saw it in The OIL WEEKLY

For dependable results always specify Elliott — the pioneer core drill.

THE KERN RIVER OILFIELDS OF CALIFORNIA, LTD.
BAKERSFIELD FIELD OFFICE
R. R. No. 1, BOX 82, BAKERSFIELD, CALIFORNIA

ACTING SUPERINTENDENT
C. O. HOLLIS

Sept. 15, 1928

Elliott Core Drill Co.,
860 Subway Terminal Bldg.,
Los Angeles, California.

Gentlemen:

It may be of interest to you to learn of the results obtained by our Company in the use of your Type C-9 Cable Tool Core Drill. This drill was used on our Kernoc Well No. 2, Section 13 28-28 with exceptional results for a tool of this type.

We started coring at 1506 feet, continuously coring to 1813 feet, a total of 307 feet, with 100 per cent recovery. The formations encountered were sticky shale, thin shells and sand.

This information may be of interest to other operators who are investigating your Cable Tool Drill.

Very truly yours,
E D Hollis
Sup't.

EDH/EH

100% recovery

we frankly admit, is the exception rather than the rule with any core drill.

—it only proves, in this instance, that Elliott Core Drills can be depended on to get the maximum of long, informative cores, whatever that possible maximum might be.

ELLIOTT CORE DRILLING CO.
850 Subway Terminal Building
LOS ANGELES, CALIFORNIA

Branches:
3210 Harrisburg Blvd., Houston, Texas
15 So. Madison St., Tulsa, Okla.
618 Lake St., Shreveport, La.
104 Brien St., Beaumont, Texas
Elms Specialty Company
516 Seventh St., Wichita Falls, Tex.
417 S. Washington St., El Dorado, Arkansas
Export Office:
150 Broadway, New York

ELLIOTT
CABLE TOOL CORE DRILL

A Letter from Harry G. Nye

Nye Drop Forged Pipe Cutter

No. 1-A ⅜ to 1¼" .....$2.75 net
No. 2-A ¼ to 2" ..... 3.30 net
No. 3-A 1 to 3" ..... 5.50 net

Nye Saunders Pipe Cutter

No. 1 ⅜ to 1" .....$2.00 net
No. 2 1 to 2" .....3.00 net
No. 3 2 to 3" ..... 7.33 net
No. 4 2½ to 4. ..... 12.00 net
No. 5 4 to 6" ..... 18.67 net

Nye thin blade cutter wheel, made to fit all standard makes of pipe cutters, and guaranteed against breakage in use. Made both in smooth and knurled edge.

NYE NO. 2
(Toledo Type)
Geared Threading Device Improved

Capacity 2½ in. to 4 in. inclusive. This tool has the same rugged construction as the No. 1 and No. 1A Nye Receding stocks. A ratchet handle and a spider hub threaded for 1-inch pipe is furnished as standard equipment.
Net price complete $50.00
West of Rocky Mountains .. 55.00

FREE TRIAL—ABSOLUTELY GUARANTEED

Nye Self-Locking Vise

No.	Pipe	Vise, Complete Net
00	⅛ to 2 "	$2.82
10	⅛ to 2½"	3.34
20	¼ to 3½"	5.00
30	½ to 4½"	7.33

To the Oil Men of the U. S. A.

Fellow Citizens:

The approach of Washington's Birthday reminds me that one thing this country needs, and I hope Hoover will do something about it, is a good directory of high class liars. Being a politician, he must know most of them. Such a book is badly needed. Every once in a while a fellow requires the services of a good liar, for a witness, or a press agent, or something, but where can you find him? If it's a stenographer you want you can call up an employment agency and get one, maybe. If it's a hired girl you can call up a bureau and get one, perhaps. But the employment agent won't send you a liar, and is too busy to come himself.

There are a lot of good liars in this country, but the trouble is that they are always around under your feet when you don't want them, and never handy when you need them most. If some fellow will get up such a book or start such a bureau he will make a lot of money. Accomplished liars, for instance, could be furnished to accompany husbands home from the poker game, or where were you. There are times when words fail you, and this is one of the times. In fact there is hardly a person who doesn't need the services of a good liar now and then, or even oftener. Most of us can do an amateur job, but when a man comes home at 4 a. m. what he needs is the services of a professional.

There are lots of good openings for lots of good liars. Wouldn't it be great when you overslept if you could have someone fix it at the office before you got there? And when the goods you ordered for a customer failed to arrive, because you forgot to order them as a matter of fact, wouldn't it be nice if someone could take care of the customer for you as a matter of fiction? I hope this letter will catch the eye of some good liar somewhere, although I don't see how it possibly can, in the oil industry. But, if it does, I hope he will write the book, or start the bureau, or both, and then call me up.

The fact is that I have told the truth so long about Nye Tools that I find I can't lie about anything, much. The truth is, as you know, that Nye Tools cut pipe faster, easier and altogether better than any others. We don't have to lie about Nye products. We would if we had to, but we don't have to.

Truthfully yours,

HARRY G. NYE,

Otherwise Known As

THE NYE TOOL & MACHINE WORKS

4120-30 Fullerton Avenue

Chicago, Ill.

(Copyright, 1928, by Harry G. Nye. All rights reserved)

The rugged construction and few working parts account for the simplicity and durability of these Nye Receding models. They do the work easily and efficiently.

No. 1 Nye Receding Pipe Threader, complete ....$9.60 net
West of Rocky Mountains $10.80

NYE (Toledo Type) Chasers Fit Nos. 1, 1A and 2 NYE (Toledo Type) Stocks

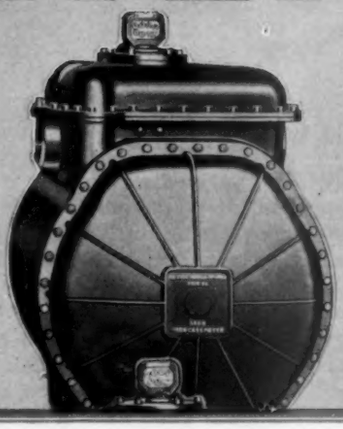
Each set is guaranteed in every particular. Will cut much easier than other similar dies.

No. 1, 1" to 1½" ..$ .75 per-set net
No. 1, 2" .....$1.25 per set net
No. 2, 2½" to 4" ..$3.60 per set net

The No. 1A is the same as the No. 1, except that it is equipped with a ratchet for work where space is restricted.

No. 1A Nye Receding Pipe Threader, complete ...$12.00 net
West of Rocky Mountains $13.50

IRONCASE



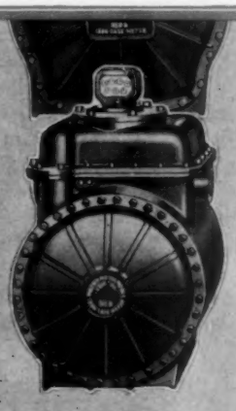
THESE modern Metric Ironcase Meters displace 60-B, 100-B and 200-B Iron case models. Retaining the same basic operating principles that have been so reliable for 18 years in the older Meters, they have increased capacities, less weight and important improvement features, now demonstrated sound and efficient by continuous service.

GREATER capacities for their weight . . . reduced weight for their capacities . . . the same revolutions per cubic ft. of gas measured.

Designed especially for measuring gas under pressure or vacuum.

Exclusive and new construction features make them the most modern of all gas meters.

PRACTICALLY perfect valve movement and wearing qualities have been attained . . . friction and squeaks have been eliminated by light weight valve covers . . . lubrication is accomplished during operation through an alemite system. Measuring efficiency has been promoted by a 3 position application of Timkin bearings.



METERS

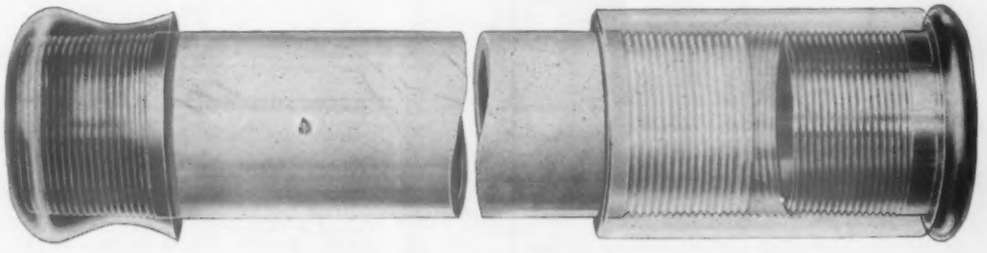
MADE TO MEASURE ACCURATELY!

Why Worry with Damaged Pipe, Dirty Threads and Improper Joints?

RETHREADING costs, delays, pipe shop labor, and the hazard of improper joints are eliminated by the Colona Thread protector—now used and endorsed by many of the largest makers of pipe and casing, whose interest does not end at the mill.

The careful manufacturer of pipe protects the quality of his product, so that the threads are clean and perfect—the ends undamaged—a perfect product ready to use.

Specify Colona Thread Protectors on your pipe and couplings.—They save trouble, labor and rehandling costs.

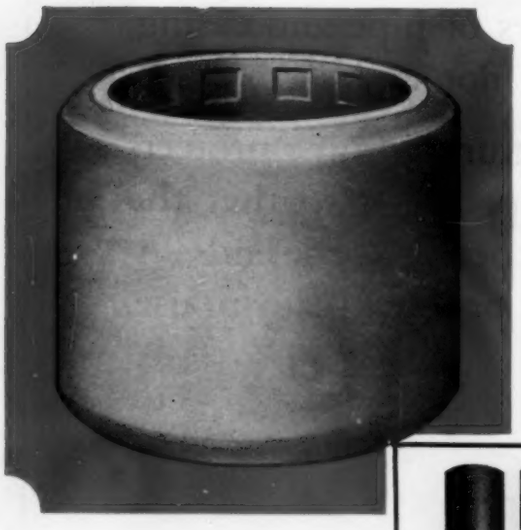


Colona Manufacturing Company

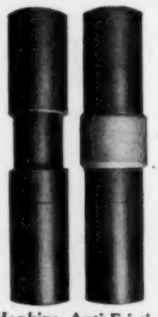
Pittsburgh, Penna.

Lost 86½ hours by not having Bettis Protectors

..reports one of the largest operators at Goose Creek Texas .....



"Best bet yet"



Hopkins Anti-Friction Tool Joints

Bettis Protectors are now available in Hopkins Anti-Friction Tool Joints and Collars which are sold by manufacturers licensed by us. Fully covered by patents.

Here's the actual report:

"On two wells drilled to the same depth, one of which was equipped with Bettis Casing Protectors and one was not, on the well not equipped with Bettis Casing Protectors the crew spent 86½ hours changing collars. On the well equipped with Bettis Casing Protectors, they spent 2½ hours putting on the Protectors, and did not change a collar or tool joint after the installation."

Our new catalog gives other interesting facts and a copy will be mailed upon request.

Patterson-Ballagh Corporation

Insurance Exchange Bldg., Los Angeles

Texas and Louisiana Distributors: Bettis Sales Co., 617 Public National Bank Bldg., Houston.

New York Office: 39 Cortlandt St.

Carried in Stock at: Los Angeles, Santa Fe Springs, Ventura, Bakersfield, Long Beach, Tulsa, Houston, New York City.

97,621 Bettis Protectors Now in Service

Bettis Protectors - The genuine anti-friction Rubbers

SAFETY
IT'S A WILSON

SPEED
IT'S A WILSON

STRENGTH
IT'S A WILSON

CONVENIENCE
IT'S A WILSON

The Wilson *patented* elements in Wilson Elevators are the basis for the 4 cardinal features demanded by progressive Operators—1st, *Safety;* 2nd, *Speed;* 3rd, *Strength;* and 4th, *Convenience.*

Successor to WILSON & WILLARD MFG. CO.

WILSON OIL TOOLS CORP.
OIL TOOLS DIVISION
of
Byron Jackson Pump Co.
2501 E. Vernon Avenue, Los Angeles, California

Products—Elevators · Tongs · Underreamers · Circulating Heads · Rotary Drive Bushings · Packers and Valves for Sand Pumps · Slotted Screen Pipe

Factory Representatives:
Tulsa, Okla., 409 Atlas Life Bldg.
Houston, Texas,
2201 Breckenridge St.
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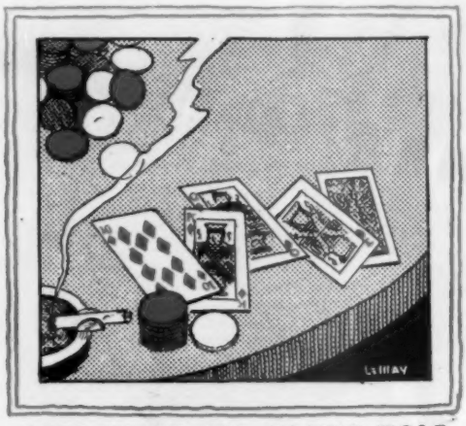
814 Dan Waggoner Bldg.
New York, N. Y.,
1245 Graybar Bldg.

No Wilson Elevator has ever dropped its load!



THERE'S AN ACE IN THE HOLE

NO

Gamble to this

The Perfection Core Barrel has earned the name . . . the Royal Flush of core barrels. There is no chance to miss taking a clean, accurate core when the Perfection reaches bottom and rotates . . . the *heat treated* Chrome Nickel cutter head, faced with *Stellite* takes care of this. It is a tool built to stand the punishment.

When you take the core out there is not a chance to accidentally break it. The Split Liner, one of our exclusive, patented features, gives you the core in just *two minutes* . . . all in one piece.

More than fifty per cent of the major oil companies of America use the Perfection Core Barrel . . . they know it never pays to take chances. Write today for full information.

THE BREWSTER CO., INC.

SHREVEPORT, LA. *Successors to* OIL CITY IRON WORKS

Distributors

Continental Supply Company, All Stores.

Hercules Supply Company, Dallas, Texas

Wilson Supply Company, Houston and Beaumont, Texas

Exporters:
Continental Well Supply Co., 74 Trinity Place, New York, N. Y.

Abercrombie
INSIDE CUTTING TOOL

Does Not Damage Casing or Casing Seat!

When we have completed the cutting and removing of liner and screen from the bottom of your well, everything is in perfect condition for additional drilling.

The casing and casing seat have not been impaired, and drilling can be continued without reducing the size of the hole.

The economy and dependability of this method of reclaiming lost wells, or reaching deeper sands has merited the highest praise from leading oil companies, for whom we have done hundreds of cutting out jobs, on both new and repeat contracts.

In a very short time and for a very small charge, we can save you the cost of drilling a new well or the questionable results of whipstocking.

ABERCROMBIE

REDBALL SERVICE

Twelve highly trained and skilled craftsmen, experienced in drilling and cutting practices, are ready to serve you on a moment's notice. Your phone call, wire or letter will bring one of these men, fully prepared with tools and equipment, to go to work. Call Abercrombie on your next cutting job.

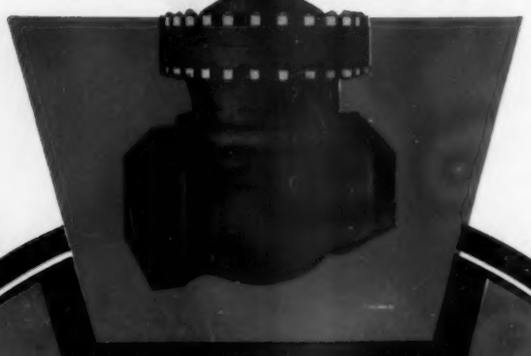
Abercrombie Cutting Tools are made for the following casing sizes: 3", 3½", 4", 4½" 5-3/16", 6", 6⅝", 7", 8¼", 9" and 10".

J. S. ABERCROMBIE Co.
616-18 West Bldg. Houston, Texas

KEROTEST

Cast Steel

DRILLING VALVES



PIPE LINE VALVES

REFINERY VALVES

"Kerotest" means Kerosene tested

The exclusive Kerosene Test,—which guarantees that every Kerotest Valve is not merely oil tight but kerosene tight under maximum duration pressure—has made Kerotest Valves famous throughout the petroleum world as a valve of certified dependability.

Kerotest Manufacturing Company
Pittsburgh, Penna.

Carried in Stock and Sold by
NORVELL-WILDER HARDWARE CO.
Houston, Beaumont, Shreveport, Fort Worth
OIL WELL SUPPLY COMPANY
Branch Stores in all Oil Fields

Export Distributors
OIL WELL SUPPLY CO.
Pittsburgh, New York, Tampico
London

KEROTEST

PITTSBURGH

Say you saw it in The OIL WEEKLY

DEPENDABILITY

Patented Oct. 6, 1925—Other Patents Pending.

Long Experience, carefully inspected Special Alloy Steel, Skilled workmen, modern machinery and methods are combined to assure in SPANG WELDLESS JARS, the dependable quality which gives you that feeling of ease and satisfaction when the tools are equipped with Spang Jars.

Are you using SPANG WELDLESS JARS, the most dependable Jars made today?

Spang and Company

BUTLER, PENNA.

Sold by All Leading Supply Houses

Patented Oct. 6, 1925—Other Patents Pending.

19 Years in the Oilfields of the World

AROUND the world . . . in oil fields of every description . . . . you'll find the Wichita Oilfield Special . . . . a reliable and rugged truck . . . . performing heavy tasks day after day . . . . week after week . . . . year after year . . . . under all difficulties of weather and roads . . . . at least cost per load.

For 19 years now, Wichita Trucks have worked in the world's oilfields. Their reputation has been built upon *performance*, not promise.

You may own a Wichita Oilfield Special with the confidence that it will do the work of the oilfield cheaper, better and more dependably than any other 3-ton truck. 19 years of specialized production guarantees you that.

Wichita Oilfield Special

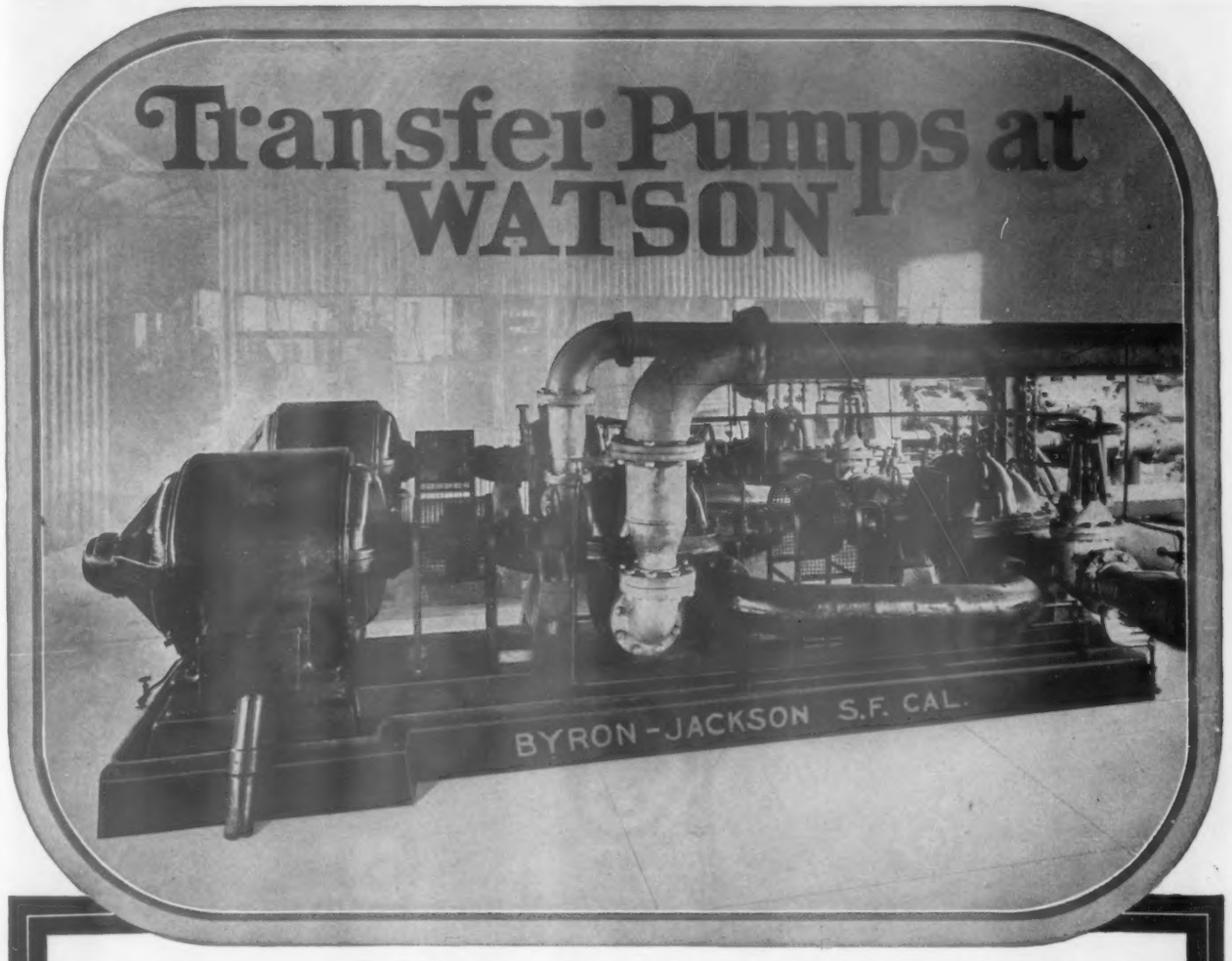
Built through and through to give you the best performance of any truck made—that's the Wichita Oilfield Special. Examine it unit by unit and you will see why it out-performs other trucks. Our engineers have studied the problems of oilfield transportation for 19 years and the design and construction of the Wichita Oil field Special is based on their developments.

Send today for illustrated booklet that shows you, in detail, the splendid features of the truck that was made for you and your work.

WICHITA FALLS MOTOR COMPANY

J. A. KEMP, *President* WICHITA FALLS, TEXAS

Transfer Pumps at WATSON



Wherever pumping is done on a large scale, through oil pipe line pumps or in refineries, Byron Jackson Multiplex centrifugal pumps are the invariable preference. At Watson, Byron Jackson centrifugals are everywhere in evidence. This photograph shows them handling gasoline in the ten-mile line to Los Angeles Harbor. Byron Jackson Multiplex pumps are also employed on the 100-mile line from Ventura to Wilmington, the longest natural gasoline line in the world; also in many pipe lines and refineries in various domestic and foreign fields. In the growing dependence placed on Byron Jackson equipment the world over by petroleum engineers is seen the reward of this company's policy in designing durable pumps to meet the needs of the industry.

SINCE 1872

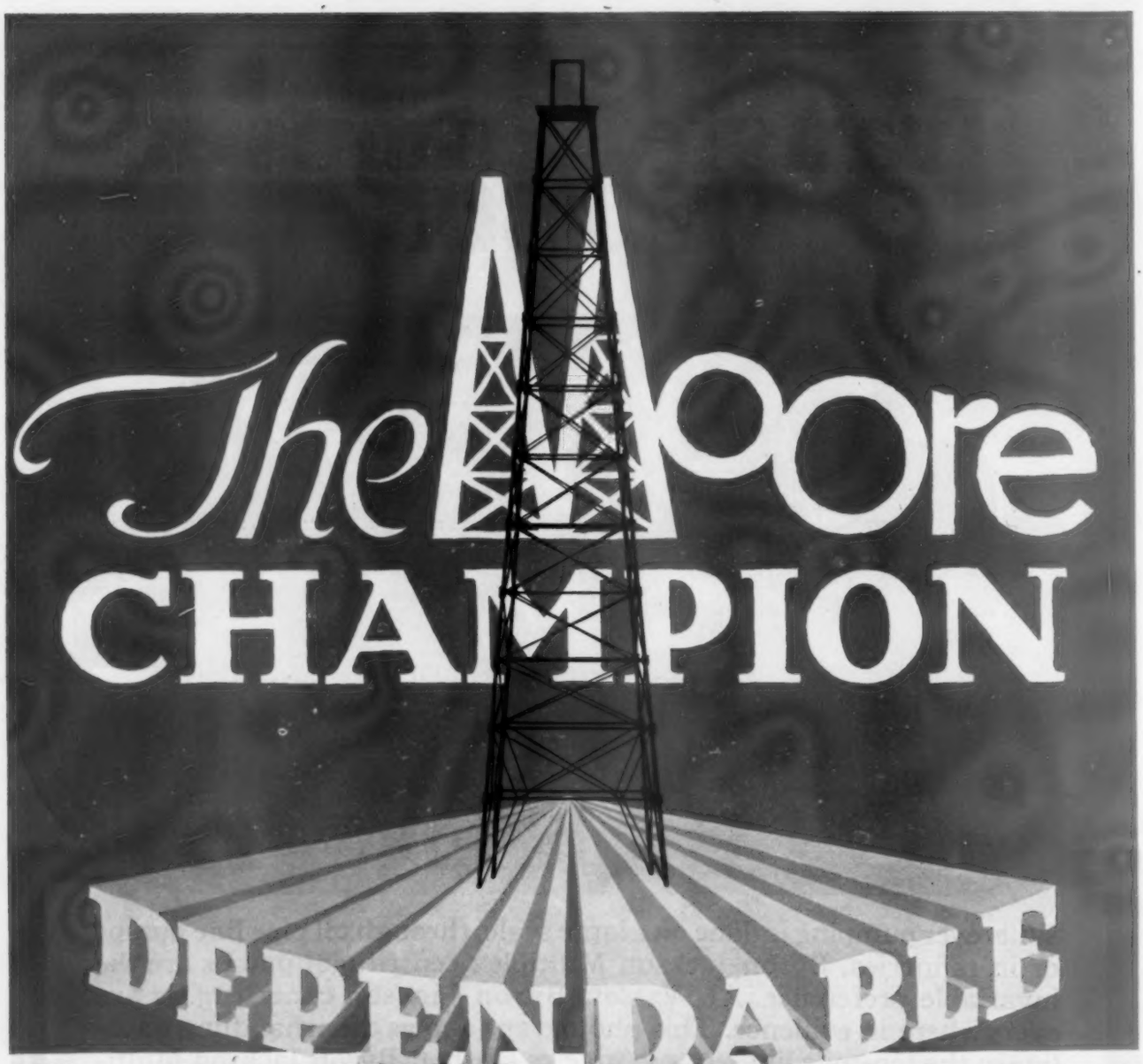
BYRON JACKSON PUMP CO.

Factories: BERKELEY, Los Angeles, Visalia

Branches: San Francisco, Portland, Salt Lake. Dallas, Phoenix

BYRON JACKSON

CENTRIFUGAL PUMPS FOR EVERY SERVICE



A SUPER DERRICK

LEE C. MOORE & COMPANY, *Inc.*

PITTSBURGH · TULSA

Established 1907

New York Offices: Oilfield Equipment Co., 30 Church St., New York, N. Y.

DALLAS, TEXAS HOUSTON, TEXAS WICHITA, KANSAS CASPER, WYO.
PARKERSBURG, W. VA. SHREVEPORT, LA.

Stocks in all Principal Fields

Say you saw it in The OIL WEEKLY

Through Mountains of ROCK!

REED ROTARY DRILLING TOOLS

The Reed Rock Core Bit is today penetrating the hardest of rock formations, for the simple reason that its principle of design follows closely that of the Reed rock bit.

The cutting action is positive, sure and true.

The cutters are as easily and quickly changed on the derrick floor as are those of a Reed Rock Bit.

It is equipped with a reamer whose cutters follow the bit cutters within a very few inches, thus maintaining perfect four-point contact with the wall of the hole and prevent the bit from jumping in the hole, shattering or breaking up the core which is being formed.

These cutters also assure a full-gauged hole through which a rock bit can be easily and quickly set on bottom, if desired, after the core has been taken.

(See next page)

For Geologic FACTS!

REED ROTARY DRILLING TOOLS

The core catcher is placed low in the bit head directly above the cutters and is very positive in its pick-up.

Cutter replacement is most economical, due to the fact that seldom is a full set required for a second run and generally only two or three cutters, or other small parts, are needed.

The construction of the head is such that head replacements are infrequent.

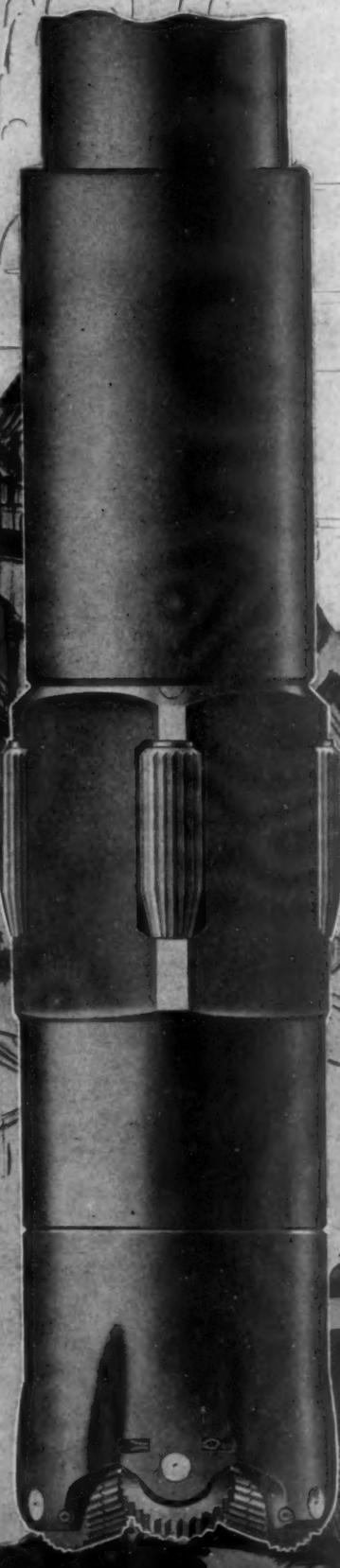
Minimum weight is required in the successful operation of this bit and cutting speed is generally much greater than a rock bit of like size.

In the determination of sub-surface geology the REED ROCK CORE BIT is unexcelled.

Write us for full details.

REED ROLLER BIT CO.

HOUSTON · LOS ANGELES



ONE of the proudest names in the history of oil country equipment is unmistakably REID. No other important products in the industry are more universally standard than Reid Powers and Engines. You see whole forests of derricks with a Reid Engine at every one. You see Reid Pumping Powers around the world, Reid driven. One of the most interesting Reid Gas Engines ever brought out is the Two-Cycle Type C. Let us tell you about it at our Store in your field, or with literature from our Tulsa office.

QUALITY PRODUCTS ONLY

FRICK REID

SUPPLY CORPORATION

Pittsburgh, Pa. - Tulsa, Okla.

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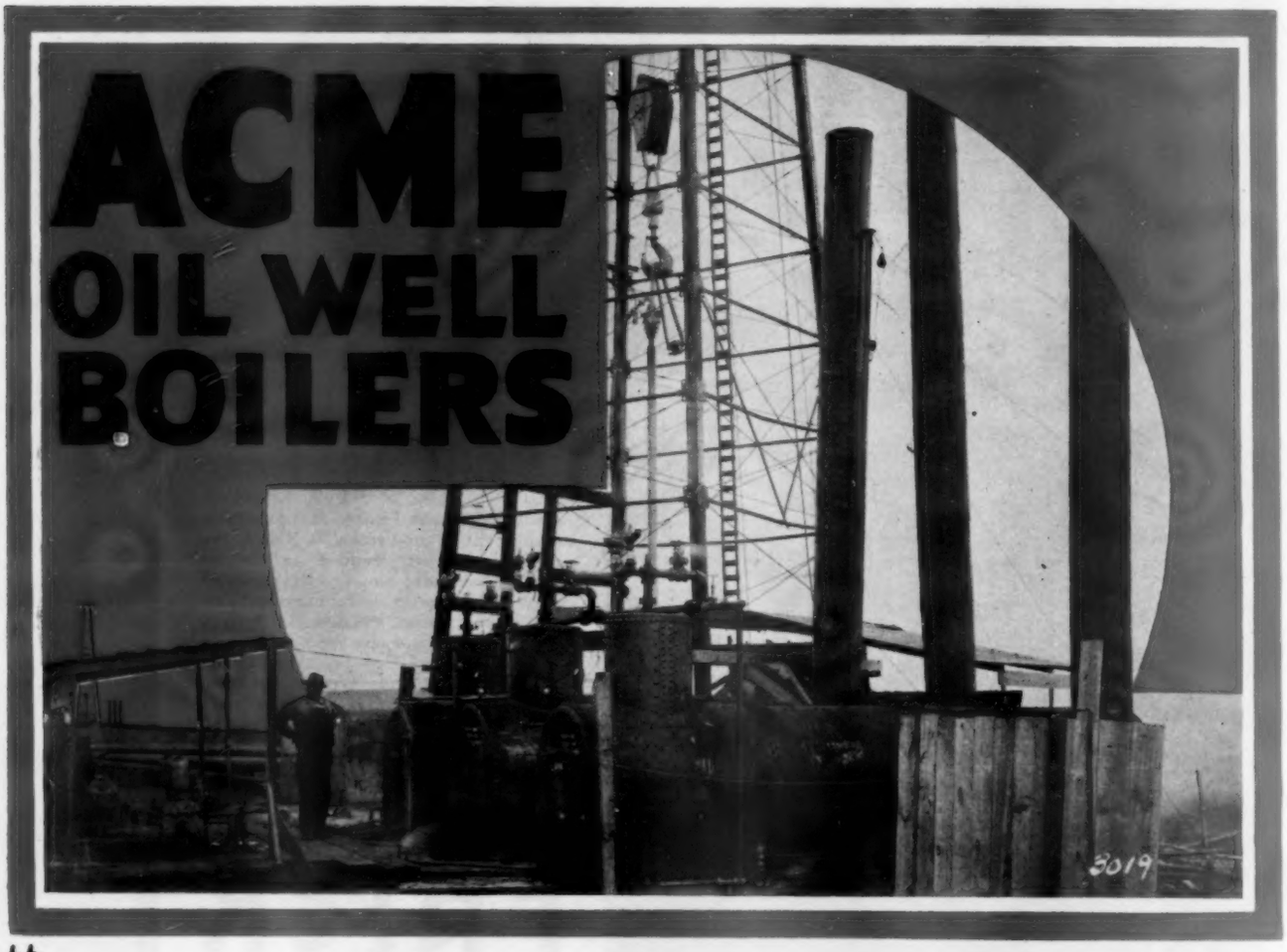

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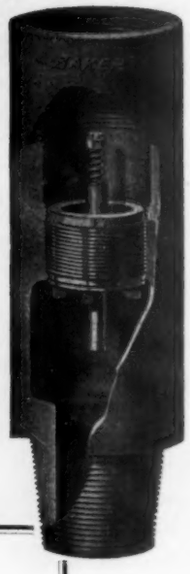

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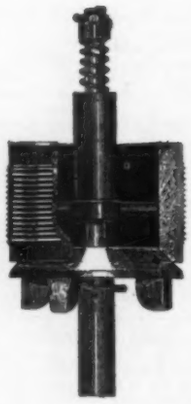

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Say you saw it in The OIL WEEKLY

Crude Market Structure Is Weakening

Another sharp gain with prospect of continued upward trend makes general price reduction appear imminent

By H. J. STRUTH
Staff Economist

ABOUT the worst thing that could happen to the oil industry now would be a reduction in the general crude market. Week after week, there has been talk of possible extensions in proration agreements, in an effort to stem the rising tide of crude, but as the weeks come and go the daily average production mounts to alarming heights while the leaders sit by and view the situation with alarm.

It has been pointed out in this section repeatedly that the amount of oil in sight is decidedly dangerous to the general market structure of the industry, and that unless some action is taken the infallible laws of supply and demand will bring about a natural corrective remedy.

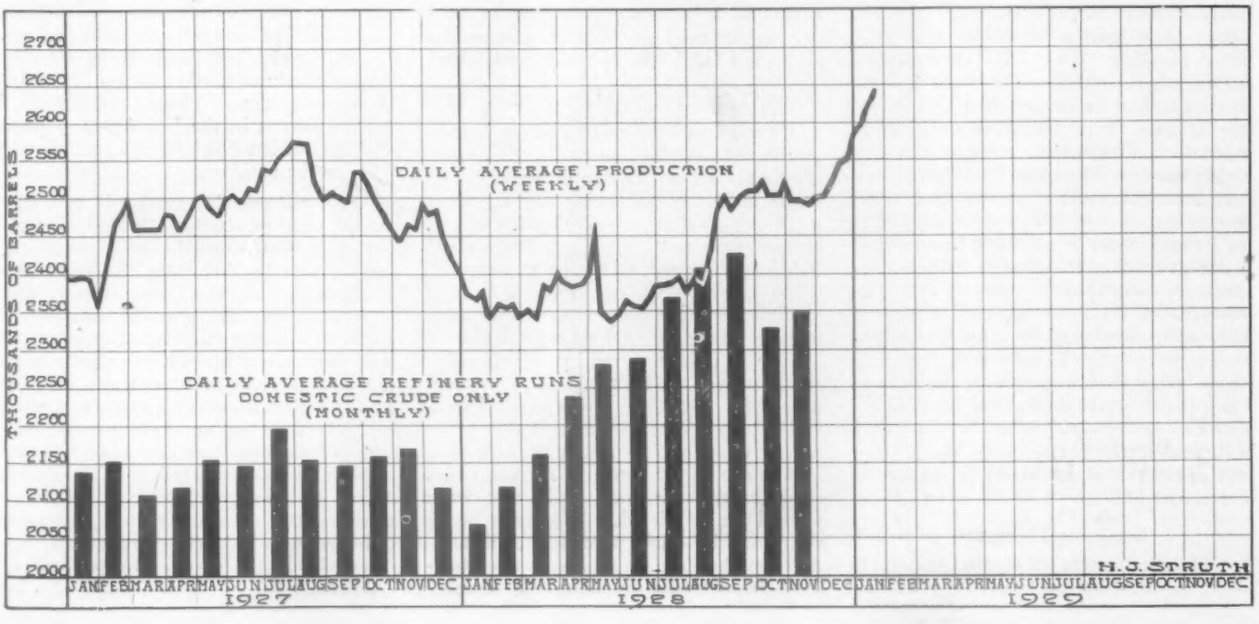
As the situation stands now, with the national output of crude at the highest level in the history of the petroleum industry, and with the prospect of a continued upward trend during the next few months, it begins to appear imminent that the crude market will lose the slight gain of last July. At that time, an advance in the general crude market was justified, and it was believed that the effect of proration would bring about further corrective measures that would justify another reasonable advance in the crude market during the early part of this year. Instead, however, wildcatting was resumed with renewed vigor and proration schedules were gradually adjusted, upward, until now it begins to look as if the "lid" was off entirely. As a result, the industry has entered 1929 in a rather precarious position, and the excesses of recent weeks have imparted a decidedly weakened tone to the market structure.

The situation in California appears to be growing more unfavorable as production continues to register new high marks each week. Last week, California's output reached 753,650 barrels daily, an increase over the preceding week of 31,500 barrels. As anticipated, crude values there are being revised; the first reduction coming on January 18, when all grades below 24 gravity were cut out on an average of 15 cents a barrel. Although there has been a good demand for light oil, it is a foregone conclusion that any further increase in light oil production will be met with a reduction in posted prices. California light oil stocks have been declining during practically most of the last year, but on January 1, it is indicated that there was a sharp upturn in these stocks, placing them well above 17 million barrels. It is the demand for light oil that has prevented a decline in California crude values during recent months, but now it appears that operators there are going after new supplies, oblivious of the possible result in the crude market.

Big Production Increase

An analysis of last week's daily average production, as reported by the American Petroleum Institute, reveals that there was an increase of 50,550 barrels daily. This gain was contributed by California, with 31,500; Texas, with 12,400; and Oklahoma, with 3,900. The bulk of the gain in California came from Santa Fe Springs and Ventura, while the gain in Texas was supplied by West and Southwest Texas; Howard, Winkler and Pecos Counties, in West Texas contributing 11,050 barrels, and Salt Flat, in Southwest Texas 2,400 barrels, other Texas sections making up the difference in total gain. Ok-

DOMESTIC PRODUCTION AND REFINERY RUNS



DETAILS OF CRITICAL FIELDS

Pool	Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Production Per Well	Rigs Up	Wells Drilling
WEST TEXAS—								
Hendrick	498	2,768,755	5,560	503	169,265	337*	8	49
Church & Fields	189	203,465	1,077	187	26,075	139	..	..
Gulf-McElroy .	68	55,740	820	68	12,885	189	..	3
Yates	291	1,896,520	6,517	289	74,305	257*	7	8
Total	1,046	4,924,480	4,708	1,047	282,530	270	15	60
TEXAS PANHANDLE—								
Hutchinson Co.	1,139	549,255	482	1,013	27,895	28	7	21
Gray County ...	315	132,620	421	305	23,150	76	9	45
Carson County .	182	60,095	330	158	5,645	36	5	13
Wheeler County	44	14,645	333	35	695	20	8	14
Moore County .	10	6,125	612	8	2,320	290	2	6
Total	1,690	762,740	451	1,519	59,705	39	31	99
OKLAHOMA—								
Seminole	1,646	2,134,956	1,290	1,330	291,783**	211	52	227
St. Louis	343	362,834	1,057	298	130,837	439	22	56

* Production partially pinched.
** Maud and Mission districts partially pinched.

lahoma seems to be getting into the flush stages again, with an outlook for continued gains during the next few weeks. Last week, Seminole, Little River, Earlsboro and Maud, registered a combined gain of more than 8,500 barrels, while St. Louis and Burbank showed a decline, making a net gain for the state of 3,900 barrels. The Rocky Mountain area also showed a gain amounting to 2,050 barrels, which was contributed mostly by Salt Creek, Wyoming, and Pondera, Montana. Work has apparently slackened up in the Eastern States, which again showed a decline which last week amounted to 750 barrels.

Stocks Too Big

The ratio of above-ground supplies of crude to total demand reveals a decidedly unfavorable picture. This and the fact that a great many additional wells are due to come in during the next few weeks makes it appear imminent that crude values are on the verge of at least a temporary slump. It is deplorable that all encouraging signs of recent months should have been completely erased and the industry is now faced with the only alternative—a downward revision in the crude market. The only field that shows any strength is the Appalachian area, but it is believed that recent advances in Pennsylvania crude have been somewhat overdone. In other words, if production continues to mount in other sections of the country, as it undoubtedly will, there will be a general markdown in posted prices, and Pennsylvania grades cannot escape similar action. Perhaps if there is a general reduction in crude prices, the industry will realize the seriousness of its present situation and set about in earnest to correct its ills.

Seminole Increased

Oklahoma crude oil market was featured during the past week by an increasing output at Seminole. The recovery of that area lacked but a few thousand barrels of reaching 300,000 barrels daily again. During the next few weeks that figure should be passed and within another month the production of Seminole probably will be close to 340,000 barrels per day. Allen field is also playing an improved position. Deepening of the Sinclair Oil & Gas Company's Wilcox sand discovery well there resulted in it making 1800 barrels. Several other wells are due to be completed soon, and many operators are completing preparations to start tests to the Wilcox sand.

There now remains no hope of any decline in Oklahoma's crude oil production to make room for the 60 completions expected in the Mission field during February. The state's production may even surpass the 750,000 barrels predicted for it a short time ago.

The refined market of Group 3, remains slow but steady. Unfair weather during the past week made movements slow, and but little change is anticipated.

North Texas Refined Market Improves

A more favorable refined oil market situation put in its appearance in the North Texas district during the past week, with crude oil prices advancing five cents, or more per barrel to an average price of 62½ cents. Increased buying by railroads and industrials served to stiffen the market, while the supply has been reduced by local plants cutting down crude runs and doing more cracking of fuel oil and distillates. The high gravity grades of gasoline strengthened in tone after a large export order was distributed among Mid-Continent plants. U. S. Motor gasoline offers a price range of 7 to 7¼ cents per gallon. A soft spot developed in the West Texas crude market situation early this week when Humble Pipe Line Company began restricting its crude purchases to a minimum in the deep pay area of the Howard-Glasscock County field, thus forcing several of the largest independent producers to shut in wells until another market outlet can be obtained. This is a local situation and will be cleared up as soon as the three refining plants located east of Big Spring, begin operating in a few weeks. Further relief will probably be provided by Shell Pipe Line Company which is the largest crude purchaser in the distressed area, when repairs can be made on its million-barrel crude reservoir at McCamey. Facilities are available for producers to have their crude gathered and loaded on tank cars at 10 cents per barrel, and unless the local market is expanded sufficiently to absorb the oil turned away by Humble Pipe Line Company this means of relief may be used.

California

Light oil production in California has increased so rapidly that premiums paid for spot crude have been reduced to a minimum. The development of a fair production by the smaller companies probably will temporarily remove premiums. Total production is approaching 750,000 barrels, of which an increasing proportion is refinable crude.

Santa Fe Springs is showing a rapid gain, with a production of 200,000 barrels seemingly just around the corner. The field is now the most important market factor in the state. Curtailment and conservation, until recently regarded with seriousness, seem to have been forgotten.

Long Beach, Elwood, Hawthorne and Kettleman Hills either will continue as important market factors or will become so at a later date, but no one offers a serious threat at this time.

Heavy oil in all California fields has been reduced by the principal purchasing companies. The reduction affects oil below 24 gravity, with an average reduction of about 15 cents. Heavy oil in the San Joaquin Valley was reduced on a lump basis, all grades below 20 gravity dropping to the posted price of 14 gravity crude.

The huge loss of natural gas in the Santa Fe Springs field continues unabated and there is some doubt that the repressuring plan will be placed in effect before the natural decline of the field takes the usual course. There was already a surplus of gas in the Los Angeles Basin, and the sudden flood from a new district adds to the problem.

The retail gasoline market is in a temporary state of chaos, following the leasing of company-owned service stations to employees. In doing so, the companies made it clear to the lessees that if they wanted to cut the price of gasoline to compete with the so-called "bootlegger" it was their own affair. The new proprietors immediately reduced the retail price to two and even three cents below what was recognized as the standard posted price. The reduction of standard brands caused a rush to the newly-leased, company-owned stations, much to the embarrassment of the cut-price retailer. Negotiations were immediately launched and it is believed that the gasoline market will be stabilized.

Corrosion Has Been a Problem Since the Iron Age

And research has done little to combat it when hydrogen sulphide is the activating agent; control of moisture tends to minimize attack

By L. G. E. BIGNESS
Associate A. I. M. E.

AS the work of developing new oil fields in West Texas continues, the the operators find that those things that happened to equipment in the Panhandle fields where sulphur oils were produced are being repeated in the more recently developed areas.

The Yates pool is a notable exception to this general statement, for little or no corrosion has been noted there thus far, and this is accounted for because of the fact that this field has been produced under proration restrictions and this has held back any water that might be in the oil formations.

This seems to establish one condition that is necessary for rapid corrosion of oil field equipment, and that is, the need of producing water along with the oil and gas.

At the outset it did not appear that the destruction of equipment in the Borger field would be very serious but as water increased the corrosion in the pipe lines and steel tanks became worse and finally reached a stage where it gave considerable concern to the operators who turned to nearly any kind of protective coating for relief but not with any definite success.

In Crane County it appeared that the oil and gas would not give much trouble in handling, but when water put in its appearance the steel equipment began to suffer and in some parts of that field tanks have been known to be corroded to failure in less than six months. The material from which the tanks were made was .109 inch (12 gauge) thick.

In Winkler County it was at first thought that no special trouble would be encountered in handling the wells' productions but again this was found to be erroneous and the trouble is especially evident there in the upper parts of the three ring treatment tanks.

Over to the east of the Permian Basin in Mitchell County where the first limestone oil was discovered while the Ranger boom was still active, they have suffered continuously with loss of equipment due to handling high sulphur oils with hydrogen sulphide gas.

In the spring of 1926 considerable work was done there investigating this problem and it was reported that this oil carried from 3½ to four per cent. sulphur by volume which is quite high as shown by a table of sulphur contents of representative fields of West Texas and Panhandle districts, as reported by the Bureau of Mines.

Field—	Per Cent. Sulphur
Panhandle (Granite Wash)	0.52
Panhandle (Granite Wash)	0.55
Panhandle (Lime)	0.69
Panhandle (Lime)	0.62
Big Lake (Lime)	0.30
Big Lake (Texon sand)	0.34
Big Lake (Permian Lime) (Composite sample)	0.36
Chalk Field (Chalk)	0.84
Chalk Field (Chalk)	0.91
Chalk Field (Limestone)	2.02
Church, Weekly, Fields (Limestone)	2.69
McElroy Field (Permian Lime)	2.42
McElroy Field (Permian Lime)	2.40
McCamey Field (Permian Lime)	2.29
McCamey Field (Permian Lime)	2.23
World Field (Permian Lime)	0.59
Hendrick Field (Permian Lime)	1.53
Yates Field (Permian Lime)	1.61

In another report issued by the Bureau of Mines and prepared by H. C. Fowler, (Serial No. 2847) is given the following hydrogen sulphide concentration in the gas from some of these areas listed above.

Field—	H_2S content in gas per cent. by volume
Panhandle ("Big Lime")	0.50 to 0.65
Big Lake	10.00
McCamey	6.00
Crane-Upton	8.00 to 12.00

In studying the above tables it is rather interesting to note that the sulphur content in the oil and the hydrogen sulphide contents in the gas in the Panhandle district were not particularly high as compared with some of the districts in Crane-Upton County and the Permian Basin, but time has demonstrated very decidedly that when water has put in its appearance in appreciable quantities the destruction of iron and steel equipment is rapid.

Work in the Mitchell County area, the Westbrook pool, was done to protect the bolted steel storage tanks but the results secured do not seem so very encouraging although there has been some slowing up of the action.

One idea was put into test there that seemed to hold some promise but the final results after two years of test has not been satisfactory. The use of water seal top for the tanks is referred to and it was thought when this type of deck was used that by keeping the gas cool it would not be so active in its combining qualities.

Further it was thought that if the decks of the tank was maintained at practically the same temperature at all times the chance for moisture collecting on the under side of this deck would be minimized and this would reduce the formation of iron sulphide scale which examination showed had been breaking away from the old decks and falling to the bottom of the tank where the galvanic action between the anodic steel and the cathodic scale was set up which resulted in the very rapid destruction of the bottoms and sides of the tanks.

Laboratory work was done upon some of this iron sulphide scale and analysis of samples taken from tanks

Iron sulphide scale formed around breather hole in manhole dome on tank handling sulphur oil and gas

Sample of corrosion in deck sheet from tank in Crane County, Texas

in the Westbrook pool are given as follows:

Analysis of Scale from Under Side of Steel Tank from Westbrook Field

Calcium	00.092%
Iron (Fee)	35.158%
Free Sulphur (S)	48.406%
Sulphide Sulphur (S)	13,750%
Sulphate (SO_4)	00.885%
Chlorine (Cl)	00.000%
H_2S	00.000%
Total	99.391%

Water Soluble

Ferrous Iron (Fe)	00.385%
Calcium (Ca)	00.092%*
Sulphate (SO_4)	00.885%
Chloride (Cl)	00.000%
H_2S	00.000%
Total	1.362%

*Calcium .092% calculated, found .093%.

Water soluble consisted of ferrous sulphate and calcium sulphate. A trace of ferric iron was present.

Analysis by R. L. Ginter, Chemist.

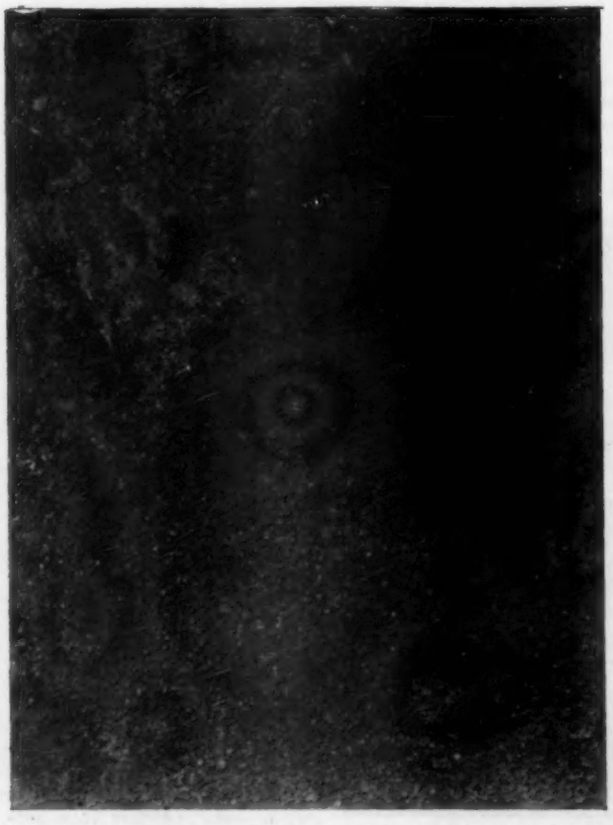
This laboratory work was carried further to ascertain what rate of accelerated action was secured by placing iron sulphide scale in direct contact with steel discs and submerging discs and scale in a bath of brine taken from a well in the Westbrook pool also.

These tests were known as the "Beaker Tests" and gave some very interesting results that are tabulated below:

	Test No. 1	Test No. 2
Weight of disc at start	29.3080 gm.	25.4860 gm.
Weight of disc at end	27.6804 gm.	25.4783 gm.
Lost during test (38 days)	1.6276 gm.	0.0067 gm.
Loss (% to total weight)	5.55%	0.02%
Loss expressed in Mg/Sq. Cm.	40.1 Mg.	0.16 Mg.

In Test No. 1 the iron sulphide scale in a powdered form was placed on the disc of tank steel used as a test piece and brine was carefully introduced by a pipette and the water covered by a layer of oil from one of the Westbrook field wells. This reproduces a condition approximating the manner in which the iron sulphide scale and steel occur in the actual field tanks.

In the test No. 2. the same kind of a steel disc was used but no iron sulphide scale was introduced into the beaker and the disc was in contact with the brine that covered it. This gives some gauge as to the normal corrosion that might be expected of steel in contact with the water



Iron sulphide scale on underside of tank deck from Westbrook field, Mitchell County, Texas

Underside of deck sheet after scraping iron sulphide scale away. Same area as shown in picture to the left

from the well if the iron sulphide scale was not present.

Further test along these lines was made by constructing a cell using for one pole a piece of tank steel and for the other pole pulverized iron sulphide scale of the analysis given above, and for electrolyte the well brine. These elements were assembled in a glass tube and lead wires from the steel and iron sulphid poles carried to a galvonometer.

As soon as the circuit was closed this cell built up a current that registered 50 millivolts on the galvonometer and within a few hours the current had reached 90 millivolts and this strength of current was maintained with practically no variation for over 20 days.

This test demonstrated that this iron sulphide scale possesses some element that seems to keep the anodic pole free of hydrogen, for normally such a cell would be expected to polarize shortly after the current started to flow and the strength of the current registered to gradually decrease until the cell was inoperative.

These tests are interesting in that they give indications of things that are actually happening in the oil fields of West Texas every day and the amount of damage done by corrosion is increasing rapidly and exacting a toll from the industry that demands that every effort be used to find means of controlling the situation.

Corrosion Defined

Corrosion is by no means a new problem, for as soon as primitive man learned to reduce iron ores to the metallic iron and fashion this iron into instruments for his use, he found out also that nature was using many things to recombine with his metal and turn it into other more stable compounds.

Dr. Frank N. Speller, in his book "Corrosion," says that "Corrosion may be broadly defined as the chemical action of certain external agencies on metals which causes their deterioration or destruction. Thus metal tends to revert to more stable combinations, of which the metal ores, as found in nature, are famaliar examples."

The very term "rust" is supposed to have been introduced into the English language through pre-Teutonic sources and signifies "rud" or "red" and seems to have some connection with the Latin term "ruden."

Rust is described as "a red, orange or tawny coating formed upon the surface of iron or steel by oxidation, especially through the action of air or moisture."

Corrosion, as distinguished from "rusting" is described as "the action of chemical agents, * * *" and in the oil fields of West Texas we find both rust and corrosion in their true sense going on very actively today, the rust on the outside of the tanks and the corrosion within.

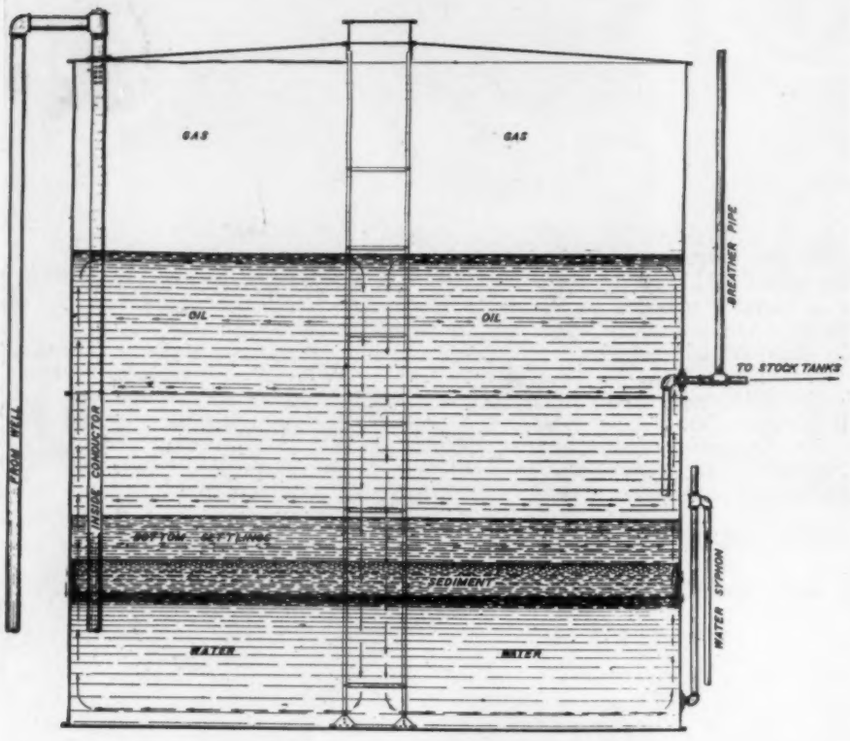
Professor W. J. M. Rankine, in his old book, "A Manual of Machinery and Millwork," published in 1893, quotes from a paper by Mallet, "On the Corrosion of Iron," in the "Reports of the British Association for 1843 and 1849, and outlines the electro-chemical theory of accelerated corrosion by saying "It (corrosion) is also accelerated by the contact of iron with any metal which is electro-negative relatively to the iron, or, in other words, has less affinity for oxygen (such as copper) *or with the rust of the iron itself.*" He goes on to offer some suggestions for methods of "preserving iron" among them being:

"1. Boiling in coal tar, especially if the pieces of iron have been first heated to the temperature of melting lead.

2. Heating the pieces of iron to the

Above — Rust on outside of steel tank.
Circle — Deposits of sulphur on a cast iron dome cover.
Below — Corrosion in the bottom of a side sheet.
All Specimens from Crane County, Texas.

OUTLINE DRAWING OF FLOW TANK



temperature of melting lead, and smearing their surfaces, while hot, with cold linseed oil, which dries and forms a sort of varnish.

"3. Painting with oil paint, which must be renewed from time to time. The linseed oil process is a good preparation for painting.

"4. Coating with zinc, commonly called 'galvanizing.' This is efficient, provided it is not exposed to acids capable of dissolving the zinc; but it is destroyed by sulfuric acid in the atmosphere of places where much coal is burned. It lasts well at sea.

"5. Coating with tin, applied to thin sheet iron."

Inasmuch as this was written about 85 years ago and practically all of the recommendations still hold good, it is rather an interesting document and tends to prove that this problem of rusting or corrosion has been given a lot of thought, but to date is still defying solution.

The principal advance that has been made in regard to this problem lies in a more complete and exact understanding of the phenomenon and it seems to be generally agreed that the "electrochemical theory" best explains the conditions governing the corrosion and rusting of iron and steel. Dr. Speller makes a non-technical statement of this theory, which is quoted in part as follows:

"Iron, like all other elements, has a definite, inherent tendency to go into solution when placed in contact with water. Iron, however, can enter solution only by displacing some other element already in solution. For instance, a piece of iron placed in copper sulphate goes into solution, but at the same time copper is plated out and appears on the surface of the iron. In the ordinary case of iron immersed in water, hydrogen is the element plated out. This hydrogen gathers on the surface of the iron in the form of a thin, invisible film.

"The presence of this film tends to obstruct or congest the progress of the reaction by insulating the metal from the solution. This interference may become so effective in natural waters as to stop corrosion altogether. Thus, the *first* stage of corrosion comes to a stop so quickly that no appreciable damage is done to the metal if the process goes no further.

"In order that corrosion may proceed, the film of hydrogen must be removed. This can be done in two ways: either it may combine with oxygen in solution to form water, or it may escape as gaseous hydrogen.

"Dissolved oxygen is usually present in water solutions, and removes the hydrogen film by reacting with it to form water. The process is then free to continue, that is to say, more iron can go into solution, more hydrogen can plate out, and the process can continue at a rate determined by the speed with which the oxygen removes the hydrogen. This is the *second* stage of corrosion and accounts for the continuance of the process in the great majority of cases.

"In acids, the same reaction takes place. In addition to this, however, the tendency for hydrogen to plate out is much greater, and so much of it gathers on the metal surface that it is forced off in the form of hydrogen gas bubbles. Corrosion, therefore, is proportionately more rapid in acid solution than in natural waters."

This outlines very clearly the whole phenomenon and we will now study its application to equipment in the limestone areas from which these sulphur oils are produced.

That the limestone areas are the sources of the oils high in sulphur contents is shown by the following, which was taken from analysis made by the U. S. Geological Survey:

Composite analysis of 345 samples of limestone oils, 0.09 per cent. sulphur.

Composite analysis of 498 samples of limestone oils, 0.07 per cent. sulphur.

Composite analysis of 253 samles of sandstone oils, 0.00 per cent. sulphur.

Composite analysis of 78 samples of shale oils, 0.00 per cent. sulphur.

So what is outlined here as applying to West Texas is also true of any district where oils are found in the limestones.

But inasmuch as the Permian Basin of West Texas is now so much in the limelight because of the great production areas already opened there, it may be well to give special attention to its problems at this time.

It is intended to divide this duscussion into several phases and particular attention will be given to steel storage, for without storage it will be impossible to handle this vast quantity of oil now being produced and potential, and also because the present investment in this class of equipment represents a vast sum.

So let us consider corrosion and rusting as it applies to steel tankage in the following order:

1. Rusting of the outside of decks and sides of tanks.
2. Rusting of the bottoms of the tanks on the outside.
3. Corrosion of the interior of the tank.

The rusting of the outside of the tanks is very similar to the rusting of any iron or steel exposed to the weather, and from the quotation above, taken from Mallet's work in 1843, we find that he had noted that this corrosion was accelerated where the metal was in an "atmosphere of places where much coal is burned," and this condition is now very true of the West Texas areas, for there they are producing a condition much like that found in zones where "much coal is burned."

This is brought about by the fact that the practice of burning the excess gas from these wells in open flames in the atmosphere causes a combination of this liberated sulphur with oxygen to form sulphur dioxide (SO_2) and for each per cent of H_2S gas burned there will be produced approximately one and one-half pounds of SO_2 per thousand cubic feet of gas.

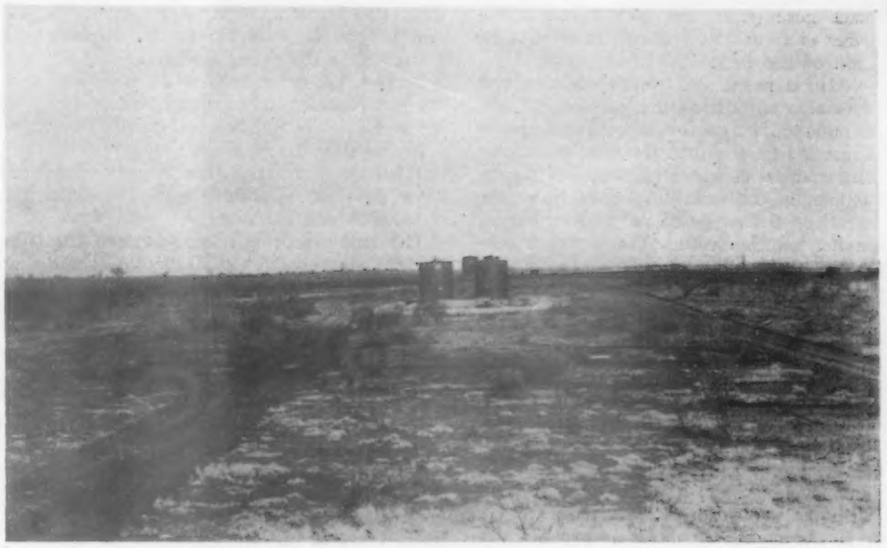
When this sulphur dioxide is discharged into the air it is naturally taken up by the moisture in the air and later deposited as a water film on metal surfaces, thus bringing the sulphur dioxide in contact with the iron or steel and experiments in the laboratory as well as field observations have very conclusively proven that this will accelerate corrosion a great deal.

It might be argued that West Texas is notable for the fact that it is a very dry section of the country and the danger in that direction is not as great as it would be if this same quantity of sulphur dioxide were discharged in the more moist air of the sea coast.

However, this gas is very soluble in

water, 80 c.c. of it being absorbed in 1 c.c. of water at 0 degrees C. When the solution is heated the gas is expelled. An aqueous solution of sulphur dioxide is oxidized *slowly* in the air to sulfuric acid; the oxidation is much more rapid if oxidizing agents are used. In preparing sulfuric acid by the oxidation of sulphur dioxide nitric acid may be used.

This point is brought out here because there has been some confusion regarding the form in which this sulphur is acting and it is desired to make it clear that the probabilities of it being converted into sulfuric acid in appreciable quantities are negligible and the reaction is more likely to be one of combination of the sulphur in the SO_2 dissolved out of the water by change in temperature with the iron, than to one based upon the formation of a weak acid.



Tank batteries in the Westbrook field, Mitchell County, Texas

It has been stated by ranchmen of the West Texas area that the summer of 1928 was the wettest they have experienced in 12 or 15 years and if this is true it is going to add to the oil man's troubles, although it may be a benefit to the cattle man and farmer.

This country adjacent to the Pecos River Valley is notable for its arid climate for the average rainfall is only about 15 inches per year and this precipitation occurs mostly as local showers of comparatively short duration and often of great violence. Hailstorms are frequent and three-fourths of the precipitation comes in the months of May to October, inclusive.

Below is quoted a summary of climatological data as prepared by the United States Weather Bureau:

Precipitation

Place	No. of Years	Annual rainfall Inches
El Paso	44	9.13
Fort Davis	31	17.46
Fort Stockton	30	15.15

Mean Temperature

Place	No. of Years	Annual Average Degrees F.
El Paso	33	62.9
Fort Davis	29	60.8
Fort Stockton	23	63.8

Mean Relative Humidity*

Place	No. of Years	Annual Average
El Paso 8 A.M.	22	54
El Paso 8 P.M.	22	26
Fort Davis	10	50
Fort Stockton	9	56

*The relative humidity is the percentage of moisture which the air contains at a given temperature of that amount which it would contain at that temperature if it were saturated. Precipitation takes place only on saturation of the air with moisture.

United States Weather Bureau reports for the year 1928 will not be available until the spring of 1929 but it will be interesting to compare them with the above tables to note whether this past summer really has been more moist than the general averages given above.

One fact has been noted, however, and that is that the large unpainted tanks were rusting badly and they were being painted as rapidly as possible last fall.

This type of external corrosion can be retarded very materially by the use of a good outside paint, but with the hydrogen sulphide and sulphur dioxide gases present in the air in large quantities as it is in the Crane County area the paint cannot carry a lead or zinc pigment or it will rapidly become changed to a sulphide compound and the effectiveness of the protective coating be destroyed.

For the second condition of outside corrosion under the bottoms of tanks, especially of the smaller bolted type, there is room for some improvement in setting conditions for this type of corrosion is very similar in its action to that which attacks the buried pipes.

Ground Moisture

However, the soils in a large portion of the Permian Basin area are made up mostly of sands and these are naturally more quickly dried where exposed to the sun, but under a tank this heat cannot reach the sand and if it becomes moist it is liable to remain in that condition for some time.

One of the best methods of protecting the bottoms of bolted steel tanks is to cover them on the outside with a coating of liquid or hot asphaltum and then spread over this quickly a sheet of asbestos felt roofing paper. This treatment will exclude all moisture from the steel and is a good investment if considered only as an insurance against possible rusting from ground moisture.

Care should be taken to see that the sand grades upon which the tanks are to be set are well tamped before the tanks are erected for if this precaution is not taken the sand may settle when the tanks are filled and cause undue strains to be set up in the tank and it has been shown that tension in metal subject to corrosion conditions tends to accelerate the speed of corrosion.

Some companies follow the practice of mounting their tanks upon wooden platforms which are so made that there are open spaces between the boards forming the direct support for the tank. This is not a good practice for air currents will flow under this structure and the moisture in the air will be precipitated on the cool steel exposed through these cracks in the platform and with the hydrogen sulphide and sulphur dioxide gases in the atmosphere it will be possible to set up all the conditions necessary to produce rapid corrosion.

If it is felt necessary to mount the tanks upon some kind of wooden or steel structure it is best to first cover the bottom with the asphaltum and asbestos felt as described above.

Some companies throw down one-inch planks on the sand grade to be used as false bottom and then spread over these loose planks tar paper and then lay the tank bottom on the paper.

If this is done properly it might be a satisfactory way of preparing a grade for a bolted steel tank, but if any old scrap lumber is used and it is thrown down in any haphazard manner it does not insure the bottom of an equal bearing surface and may prove more harmful than good. It has been found that the rats like such places for their nests and dig runways under the boards which will further reduce the bearing surface for the tank bottom and it was noted that in some bottoms the worst form of corrosion coincided very closely with the position of a rat's nest in the grade. The oil had run through the hole in the bottom and evidently driven the rat away but not until the damage was done.

Before passing on to the next phase of tank corrosion, there is just a thought or two to be left with you. If you have large, or small, steel tanks with metal roofs under your charge see to it that there are no hollows or depressions in the roof where moisture can accumulate, for if there are any such places it is quite possible that they will be the starting spots for an area of intensified corrosion.

The moisture will absorb from the air hydrogen sulphide and sulphur dioxide

and these gases will give up their sulphur to form a new combination with the iron of the deck.

Also it seems well worth while to give special attention to the painting of the outside of tanks for there seems to be some indications that areas of rusting on the outside of the tank may set up reactions in the metal that may cause the metal on the inside of the tank to have a higher solution value than it would normally have and this will induce accelerated corrosion.

Inside of Tank

Now let us give some consideration to the study of corrosion in the inside of the tank.

First let us consider the tank as divided into three zones or areas; the gas zone at the top, the oil zone down to the pipe line level and the area below that filled with the water and bottom settlings.

In the upper, or gas zone, hydrogen sulphide accumulates and as the atmospheric temperature changes moisture from the water vapors within the tank are precipitated in the form of drops of water. The hydrogen sulphide gas can be dissolved in water at the following rates:

Water at 32° F. will dissolve five times its volume of H_2S.

Water at 68° F. will dissolve 2.8 times its volume of H_2S.

Water at 212° F. will dissolve .87 times its volume of H_2S.

The aqueous solution formed on the under side of the tank roof is readily decomposed, and the hydrogen is converted into water and the sulphur is set free in a reaction represented by the following equation:

$$2\ H_2S + 0_2 \longrightarrow 2\ H_20 + 2\ S$$

Hydrogen sulphide and oxygen give water and sulphur.

This process accounts for the oxidation of the hydrogen sulphide gas and the liberation of the free sulphur and if the under side of the deck is protected by coating that prevents this sulphur coming in contact with the iron or steel, the sulphur is laid down in the form of yellow crystals and is very easily recognized.

However, if the metal is not protected this sulphur will form another combination and create the iron sulphide scale such as described in the analysis given in the opening paragraphs of this article.

Chemists are not entirely clear as to just how this reaction takes place but it may be something like this:

$$Fe + H_2S + HOH \longrightarrow FeS + H_2O$$

Iron plus Hydrogen-Sulphide and water give iron-sulphide and water.

In this equation water is expressed as HOH because of its combining qualities in this combination for it will be noted that it joins with the hydrogen to form more water while the iron and sulphur combine to form the new mixture, sulphide of iron scale.

This reaction follows closely the requirements set forth in Dr. Speller's book and quoted above where it is stated that "Iron can enter solution only by displacing some other element already in solution."

Now that this iron sulphide has been formed it is found that it is not stable and desires to break up into other compounds and it may be oxidized to the sulphate form by the following reactions:

$$3\ FeS + 3\tfrac{1}{2}O_2 \longrightarrow Fe_2O_3 + 2S + FeSO_4$$

Iron sulphide plus oxygen give iron oxide and sulphur and iron sulphate.

In this state the scale is no longer active but before it reaches this stage it may have done considerable damage to the metal to which it is attached.

The analysis of this kind of iron sulphide scale shows that it contains some free sulphur, about 48 per cent. in the sample cited, and this sulphur has combining powers when it is mixed with the other elements to form this scale and it has been suggested that it may be from this source the sulphur is drawn to cause the accelerated corrosion that has been noted when the iron sulphide scale is in contact with iron in an acid electrolyte.

Even though the reaction that takes place may be rather difficult to fully explain, there is no doubt but that it does occur when this scale falls into the oil in the tank and either sinks to the bottom because of its mass and starts its action there, or if in finely subdivided particles floats in the oil when wetted and finds its way to the sides of the tank where it is carried by convection currents within the body of oil.

This set of conditions complicates the problem of finding a protective coating that will be suitable for all phases within the tank, for what might serve very well in the gas zone and prevent the formation of the iron sulphide scale on the deck of the tank, may be very readily dissolved from the sides and bottom of the tank by the action of the oil and water.

It might be thought that if the formation of the iron sulphide scale on the under side of the deck is prevented that the rate of corrosion of the balance of the tank would be stopped materially.

However, this supposition is wrong on two counts: first, because the reaction described as taking place on the under side of the tank deck can take place just as readily in any other part of the tank, for it must be remembered that the hydrogen sulphide gas will be in solution in the oil and water and can therefore make the same kind of a combination on the sides or bottom of the tank as it could on the deck.

Second: Iron sulphide scale is made outside of the tank in the well tubing and casing and in the pipe lines bringing the well's production to the tanks. So if it was not made in the tank itself, provided the tank is of some metal other than iron, ferric sulphide scale can be and is introduced into the tank with the oil, gas and water as it comes from the well.

To consider the problem from the angle of securing a metal that will resist corrosion the metallurgist is faced with a very complex problem. All commercial metals based upon a mixture of iron are not completely composed of any one element.

Such a metal should possess a low solution pressure, and form a protective coating with the products of corrosion, and at the same time its surface condition should tend to bring about a high overvoltage.

These conditions are necessary because if any two metals are placed in contact in the air one becomes positive and the other negative and a current, even though it may be very feeble, will flow from the anodic element to the cathodic element with a destruction of the anode in time.

In the commercial iron or steel there are always some impurities and these foreign elements will tend to set up a condition similar to that described above and as the sheets in a tank are in contact with an acid electrolyte formed by the dissolved hydrogen in the oil and water the electrochemical action will be accelerated. If it were therefore possible to make steel or iron that was free of these impurities and the surface all of one potential, the problem would not be difficult of solution but such iron metal at a low price that would permit of its general use is at present rather remote of production.

Aluminum Tanks

Aluminum has been proposed and is now being used for bolted storage tanks, as well as for heat exchangers, condensors, bubble tower caps, tubing and bolts and nails, and shows possibilities. It is not so much the fear that aluminum and the sulphur compounds will combine to form sulphides or sulphates of aluminum but the thought seems to be that the real danger may come from the introduction of certain salts into the tanks with the brine from the well, or the hydrogen sulphide scale formed in the tubing and casing may be carried over with the oil into the tank.

It has been found that this iron sulphide scale is cathodic to the aluminum and if placed in contact with it will form a couple of which the aluminum is the anode and is therefore destroyed.

There is, however, a possibility that the small amount of iron sulphide scale that would come from the tubing might be treated out of the oil before it entered the aluminum tank if it is found by field tests that other elements do not attack the aluminum too vigorously and also if the relative cost of aluminum and steel tanks is such that the producer can afford to use this now higher priced metal.

Chromium steel also presents some possibilities but here again the price of the material enters largely into the problem just at this time, but the manufacturers of this product promise that the price will be reduced as the volume is increased and if field tests prove that it is satisfactory it may offer a solution to the accessive corrosion now so common in these West Texas fields.

Protective Coatings

Protective coatings are numerous and their success in resisting corrosion has been varied. Some products have been exploited at the expense of the customer that had little other merit than a means of making money for the manufacturer because it has been found that many field men are anxious to try anything that seems to offer any solution to their problems and have therefore been easily sold by these glib salesmen.

Reputable manufacturers of paints and protective coatings frankly admit that the problem presented is one very difficult of

solution because it is complicated by the requirements for a coating that will serve in the gas zone and also in the liquid zones of the tank equally well.

There have been some strides made forward in the production of a product suitable for protection of the under side of the deck but beyond this the work done with protective coatings under the oil and water and bottom settlings has been widely varied in its results.

There is one thing that is certain concerning any paint or protective coating, and that is that its life will be directly proportional to the care used in its application to the surface it is to protect.

It seems very hard to make field men realize that the problem is dealing with the atoms that make up the metal and the sulphur compounds and water and unprotected areas of minute size will form the basis for the starting of corrosion actions that will extend under paint films and continue their destructive work. In fact, it has been observed that where the larger part of the surface is covered and only a small scratch or break appears in the coating, the corrosion is accelerated at this point of break in the film.

This is only natural, for it would afford an opportunity for a concentration of the active elements in the sulphur compounds at this spot and if the reactions are followed through as outlined above, it will be found that the iron needed to satisfy the sulphur must come from a very limited space where there is a break in a good paint film, and consequently the depth of the corrosion pit will be much more than it would be if it could be possible to gather iron to combine with sulphur over a large area.

Just at this time there is a great deal of concern being expressed in the Crane-Upton and Winkler County districts because of the excessive corrosion that has become so evident there in all equipment and the reconditioning of tanks has developed into quite an industry.

To treat the metal in a tank for repainting there are two methods of procedure possible and much care should be given to the decision of the method to be used for if the work is not properly done the results will not justify the costs.

The simplest, and therefore the lowest in cost, method is to remove a side sheet from a bolted steel tank and clean the inside with a sand blast and then repaint the surface with a spray gun and in some cases apply a heavy viscous coating with brushes.

Sand Blasting

Now let us refer to some of the literature on the best methods of preparing metal surfaces for the application of protective coatings. Dr. Speller says that sand blasting is sometimes used, and at times chilled steel shot are substituted for the sand. He adds however, that "This method does not remove tightly adhering mill scale, nor clean the crevices as well as pickling." "When used in manufacturing plants, it usually takes more time per ton of product treated, and may leave the metal with a rather smooth and less desirable finish."

If this is true of this method in a manufacturing plant where they should have every facility to perform the work in a satisfactory manner, how much less applicable is such a method when used inside a semi-dark tank out on the location by men, who at best are not what could be termed "experienced" metal workers.

Further than that it has been found from close study of tank sheets that the areas where the corrosion is liable to be the most severe are near the seams of the sheets making up the tank, the very places where the sand blast has least chance to penetrate, and it has also been proven quite conclusively that if a paint coating is applied over even a small amount of the iron sulphide scale left on the metal, the action of this compound is not retarded and corrosion will proceed at about its normal rate.

So the only virtue of the sand blast method seems to be its ease of application and its comparatively low cost. But, on the other hand, if it is not effective even its low cost is not justified for any method must produce added life to the metal treated or the time and money spent is wasted.

If it will pay at all to recondition light storage tanks it would seem that the owners would be justified in having the tanks taken down and removed to some central treating plant where the old paint and muck from the oil could be removed and then the surface burned to assure that the iron sulphide scale was reduced to an oxide and further reactions stopped.

It is known that the application of a flame of moderate temperature to the surface of a sheet that contains iron sulphide scale will quickly reduce this sulphur mixture to an oxide and will leave the surface of the metal with a coating of iron oxide exposed and this has been found an excellent base for paint and protective coatings.

It is doing in a quick way what the field man has found very desirable in preparing his large storage for painting. It is common practice in all fields to allow the larger steel tanks to remain without protective coating for some time after they are erected to allow the mill scale (magnetic iron oxide—Fe_3O_4) to break away and the surface change to iron oxide or the red rust of normal corrosion, over which the priming coat is applied and followed by the second or finishing coat.

After the iron sulphide scale has been burned, the surface should be brushed vigorously with a power driven wire brush so that solid metal will be presented to the paint film and this paint film should be applied promptly after this work has been done, to prevent the accumulation of moisture on the fresh clean surface due to the precipitation of dew out of the air.

This first or priming coat of paint should have properties of sticking to the metal surface and forming a bond between it and the second coat of paint to be applied which should contain those elements that will combat the reactions described above.

There is also another quality essential to this finishing coat if it is to be applied in the tank after it has been erected, and that is the ability to "set" in an atmosphere deficient in oxygen.

Most vehicles used with paints are made to react or "set" by a combination with oxygen from the atmosphere. However, if this style of vehicle is used in a tank that is ready to be used for handling oil, gas and water from the well promptly after the paint job is finished, it is going to be hard for the vehicle that reacts to oxygen to find any of this element to combine with, for the atmosphere inside the tank will be a hydrogen one just as soon as the gas from the well fills the tank.

The practice of taking a tank down completely to recondition it may be much more costly than the method of cleaning and repainting it in place, but in the long run it is thought that it will prove the only practical method of doing this work.

However, a more practical way of combating corrosion is to make every effort to start right when the equipment is first installed and use every precaution to prevent the formation of excessive corrosion and to this end the following suggestions are offered:

Use special caution in selecting equipment that is properly designed to reduce internal strains to a minimum and made out of material of good, uniform quality.

Erect the equipment carefully and after the erection apply protective coatings carefully chosen with regard to their particular duties.

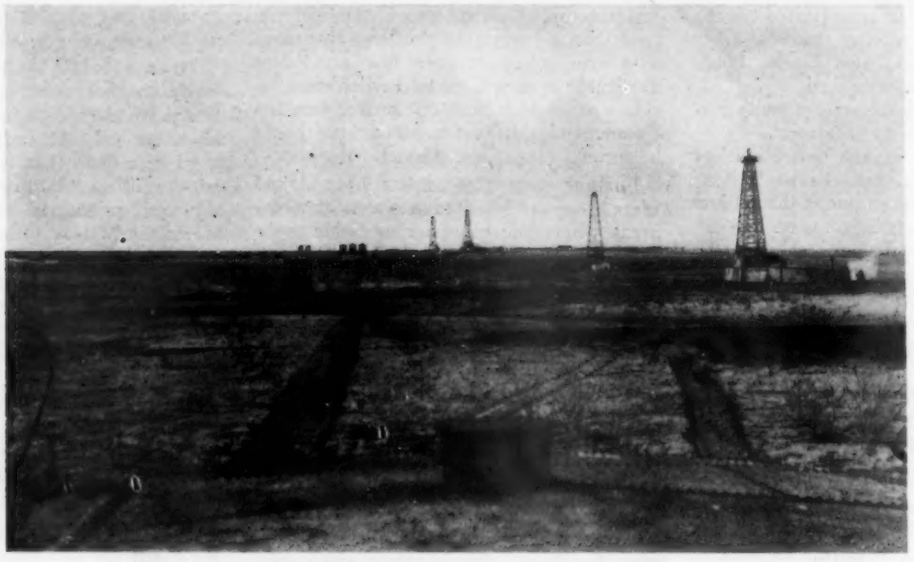
The first recommendation is based upon the premises that metal under tension strains will corrode more rapidly when subjected to conditions that will induce corrosion than metal of the same kind but not strained.

C. F. Burgess reports in an article that appeared in the Electrical Review, Chicago, under date of September 19, 1908, that mild steel bars overstrained in their middle portion and suspended in dilute hydrochloric acid solutions, and others made anodic by submerging them in neutral solutions of ammonium chloride and causing currents to flow under low current density. In all cases a marked difference was noted in the rate at which the strained portions corroded as compared with the unstrained.

The more rapid electrolytic corrosion of the strained portion appears due to the fact that the strained metal is electro-positive to the unstrained, the current finding the easier path through the surface of the electro-positive metal. That the strained metal is the more electro-positive is also shown by the liberation of hydrogen bubbles on the unstrained portion.

This indicates that the use of equipment made from a good quality of metal and carefully designed will be the lowest in cost in the long run, but it does not follow that thickness alone will give the desired results.

If a thick metal of poor quality is used the rate of corrosion as measured by inches of penetration per year



View of the Westbrook field, Mitchell County Texas

will be found to be high as compared with thinner metal of better quality.

In welded equipment much care must be taken to see that internal strains are not set up around the weld due to cooling stresses in the metal. It has long been recognized that any weld is made up of five zones or bands, the center one being composed of the welding compound; on each side of this zone will be found bands of a mixture of the welding compound and the metal welded, and still further out will be found a zone where the metal has been heated to a high temperature and in cooling has been subjected to internal strains that might cause a difference in the potential at this point.

Good welding can be done and metals used for welding can be selected with care, but such work will be relatively more costly than that done hurriedly and using cheap metals, but in the long run the more costly job will prove the most satisfactory.

10-Gauge Steel Cheapest

For ordinary bolted tanks those made out of 10-gauge metal are recommended, for this weight of steel formed into tanks actually costs less in pound price than does the tanks fashioned out of the lighter weights of steel.

If these heavy tanks are carefully erected and then painted with two coats of aluminum paint so that all of the inside and outside surface is completely covered and the paint given time to dry before the tanks are used, good results should be secured in handling these sulphur oils and their accompanying water and gas.

The aluminum is anodic, or electric positive with regard to the steel that it covers and again the principle of the volatic cell or pile is brought into play when the tank is filled with oil and hydrogen sulphide gas introduced. A myriad of small cells are formed by the action set up between the anodic aluminum and the cathodic steel and as a result of this action field observations show that the surface of the steel is etched and seems to have gone through some change that has retarded corrosion.

Red lead (Pb_3O_4) has been found to act very much the same way when used as the pigment for a protective coating, as the lead is changed to a sulphide and in doing this work seems to offer some protection to the iron it is covering. Lead as a metal is anodic to iron and would therefore be destroyed if a galvanic action is set up between them, but if the surface of the iron is in no way changed by such reaction, as soon as the lead has made a new combination it can no longer serve as a protective coating for the iron and the iron itself is attacked.

Some protective coatings that must be applied hot are being offered and in work in the East where sulphur dioxide conditions of the atmosphere are bad they are giving some very good results and tests made with material in the gas zone of the tanks have given good service after a period of six months exposure.

These protective coatings are worked out on the idea of emulsifying coal tar products and in this way stabilizing them so that they will not combine with the hydrocarbons forming the petroleums. It is interesting to note that Mallet recommended the application of tar to the hot surface of the metal as far back as 1843. The only objection to this process just now is the difficulty of applying this hot mixture in the field, but portable heating and spraying apparatus is being manufactured and it is thought that this principle will soon be tried out in actual field conditions in West Texas.

While most of the above has dealt with the problems involving steel tanks corrosion is by no means limited to that type of equipment, for the working barrels and plungers in the well along with the valve seats are rapidly destroyed.

Tubing

Tubing, especially the anchor joints below the working barrel, corrodes quickly and very thoroughly and it has also been noted that the couplings connecting the different joints of tubing together suffer a great deal from this corrosion.

One interesting experiment was carried on by a field man in the Crane County area where they were experiencing a great deal of trouble with tubing corrosion. He first used two-inch tubing and found that it corroded very quickly, so changed to 2½-inch tubing and found he got longer service under the same conditions, and then tried out three-inch tubing and found that his troubles were reduced to a minimum.

In each case the string was in the same well, and was of the same make, and it is therefore thought that this test might substantiate the theory of internal strains in metal inducing corrosion by setting up areas of electro positive potential. As the larger pipe was introduced into this well the internal strains were reduced, and it might be that some of the tension strains due to suspending this string in the hole were reduced, which also helped to reduce the corrosive action in this well.

It is thought that the action is most severe in the bottom of the hole because of the fact that pieces of iron sulphide scale that had formed on the inside of the casing would be knocked loose when lifting or lowering the tubing and this material would naturally fall to the bottom of the hole, where it would form a couple with the anchor joints of the string of tubing and quickly destroy them.

The excessive corrosion noted in the couplings in these strings of tubing may be accounted for by the fact that there is some difference in the char-

acter of the metal making up the coupling and the tubing and the coupling is evidently anodic to the tubing and the current will leave there, and this will causse the pitting to appear at these joints.

Again there is some possibility that the tension theory may have some effect here, for without doubt the couplings are under greater tension strains than the tubing it joins. Some means of bonding the individual joints of tubing together might be devised that would reduce this pitting at the couplings and should be worthy of trial.

There is one condition that should be given serious attention around steel tankage, especially when the tanks are being cleaned, and that is the rapid oxidation of the iron sulphide scale which has resulted in spontaneous combustion in several cases.

Mr. Harry F. Perkins, with the Gulf Refining Company, at Port Arthur, Texas, stated in a paper on Corrosion presented before the A.P.I., that he had found the following analysis of tank scale:

Iron sulphate	1.84
Iron sulphide	13.58
Free sulphur	7.26
Total sulphur	15.57
Total iron	55.04
Loss by ignition	20.70

He attributes the cause of many mysterious fires that have occurred in steel tanks to the formation of compounds like this one and when this material is exposed to a sudden drop in air temperature with accompanying low humidity, the scale will dry rapidly enough to cause a quick oxidation and this will result in higher temperatures with the resulting ignition of gas mixtures of a critical character which can be exploded when a spark is introduced.

Several of these explosions have resulted in a loss of life and always in considerable property damage and if this scale is kept moist when a tank is being cleaned the chance for spontaneous combustion is greatly reduced.

Pipe Lines

Pipe line corrosion, that resulting from the action of the sulphur oils inside the lines is more rapid when the lines are only partly filled. This space above the oil where gas and oxygen can accumulate seems to set up accelerated corrosion and the best remedy found has been to reduce the size of the pipe so that the lines will be full and under pressure at all times, for this condition seems to keep the pipes cleaned of products of corrosion formed elsewhere and introduced into the line with the oil, and also prevent new combinations being formed in the lines themselves.

There is some apprehension expressed as to the probable life of casing in those limestone wells where the oil and gas has caused so much trouble when introduced into the tanks and pipe lines.

If excessive corrosion does occur as it did in the Borger district, a liner string must be run in the hole and this means an added expense and probably would be required at about that time when the amount of oil being produced practically equals the cost of producing it.

It might be good policy to cement the 6⅝-inch string in the hole throughout its entire distance and in this way prevent water from breaking through into the well even if the casing did fail due to corrosion. Of course, this means losing the entire string of casing but that would be cheaper than losing the well.

The American Petroleum Institute has a committee giving some study to corrosion problems but they seem to be devoting most of their efforts to the solution of problems that have to do with the pipe line industry and the production problems are being dealt with by the individual companies in their own way.

It is hoped that some organization such as the Bureau of Mines can be induced to place a man in the field who will give his entire time to a study of these several problems and equip a complete laboratory for his use so that the samples could be handled immediately after they are secured and in this way eliminate those changes that are bound to take place in material that is shipped from the field to far distant laboratories.

With such an organization at work it would be possible within a reasonable short time to outline definitely some of these problems and give to the chemist and the metallurgist something definite to study and with such data at hand it would not be long before some definite steps forward would be made in combating this trouble which is now exacting a huge toll each year from the producer, pipe line company and refiner handling this type of oil.

Western Metal Congress Has Oil Equipment Session

LOS ANGELES—The Western Metal Congress and Western States Metal and Machinery Exposition, held in this city from January 14 to 18, inclusive, attracted an unusually large following among the oil men of the entire West, both through various papers and the varied exhibits. Although a large part of the program did not directly affect the petroleum industry, a large part of the time was allotted to papers dealing directly with the production of oil and the manufacture of oil field equipment.

The exhibits at the Shrine auditorium were among the finest ever displayed in California. In addition to equipment actually used in the oil fields, the display included tools and equipment which have a direct bearing on the industry.

The entire Wednesday morning session was turned over to the California Division of Development and Production Engineering of the American Petroleum Institute. Other sessions were of particular interest to both the producing and refining divisions.

Both the morning and afternoon sessions Tuesday proved of interest to the oil industry, some of the papers having a direct bearing on refinery and oil field operations. While of a mechanical nature, they attracted a large number of production superintendents from California fields.

Wade W. Hampton, of the Hughes Tool Company and chairman of the Los Angeles Division of the American Society for Steel Treating, delivered the address of welcome Tuesday morning. Dr. Zay Jefferies, president of the organization, responded to Mr. Hampton's address.

Papers read which had a direct bearing on the oil industry were as follows:

"Valves and Fittings in the Oil Refinery, the Material Used in Their Construction, Their Design, and Their Application in Particular Services, and High Pressure Oil Conveying and High Pressure Gas Distribution," by V. T. Malcolm, metallurgical engineer, Chapman Valve Company.

"Tendency Toward Higher Steam Pressures in Both Marine and Stationary Services, the Material Available for the Construction of Boilers for These Higher Pressures, and Some Factors Involved in Their Design," by Robert L. Daugherty, professor mechanical engineering, California Institute of Technology.

"Tool Joints," by W. H. Fisher and A. H. Martois of the Emsco Derrick and Equipment Company.

"Cast Steel Slush Pump Cylinders," by Lester Keim, general manager, Oil Well Supply Company of California.

"Kellys, or Grief Stems," Glenn C. Merkley, National Supply Company of California.

"Sucker Rods," by W. H. Laury, Axelson Machine Company, Los Angeles.

"Sucker Rod Strains and Stresses," by F. W. Lake, superintendent of operations, Orange County Division, Union Oil Company.

"Oil String Failures," by C. J. Coberly, president Kobe, Inc., Los Angeles.

An informal dinner-dance-entertainment was given Thursday evening at the banquet room of the Biltmore Hotel. A special ladies entertainment was provided each day of the congress.

Prof. John F. Keller, steel expert from Purdue University, presented five lectures which comprised his short course on steel and its treatment. Much of this course was applicable to the oil industry.

Panhandle District in Stronger Market Position

AMARILLO, Texas.—Withdrawal of 2,505,025 barrels of oil from steel storage during the year 1928 from the Texas Panhandle district and declining production has placed this section of the Mid-Continent district in a firm market position, and its four trunk line outlets are not averaging 50 per cent. of their capacity on current runs. Crude stocks have been drawn on every month since last February, while during December the reduction amounted to 67,650 barrels, thus leaving 15,650,600 barrels of oil on hand at the close of 1928, with a total storage capacity of 24,390,000 barrels. More than 12,500,000 barrels of the storage oil is owned by Magnolia Petroleum Company, Phillips Petroleum Company, Prairie Oil & Gas Company and Gulf Production Company.

The Panhandle district's 1514 producing wells averaged 59,160 barrels daily during December, while pipe line shipments showed a combined average of 37,500 barrels daily. The Texas Pipe Line Company's new eight-inch line, extending from Gray County to the Wichita Falls district, where connection is made with system leading to the Gulf Coast, was not placed into commission until early this month, and is making a strong bid for a share of the oil being produced by concerns without marketing facilities. Besides locating a supply of oil for this carrier, The Texas Pipe Line Company is furnishing the entire crude requirements of the 5000-barrel skimming plant purchased last November by The Texas Company at Amarillo.

Refineries located at Borger and Panhandle have developed a large local demand for crude, while a number of concerns with production in Gray County are continuing to make tank car shipments to distant refining points, including plants in Canada. Approximately 730 cars of crude were shipped from Pampa and Kingsmill racks during December. Bell Oil & Gas Company, independent crude brokers, are the heaviest shippers, while Sinclair Oil & Gas Company is credited with having loaded 180 cars for rail movement to Houston. The Texas Company shipped 160 cars during the month, but these will be discontinued in the future. Comparatively low freight rates and the price penalty placed on Panhandle crudes as compared to like gravity oil in the Mid-Continent enables this oil to reach distant markets at attractive prices.

Carson County scored its first oil producer of any size since last May during the past week when the Magnolia Petroleum Company's Fee 6, located in the northeast corner of Section 91, Block 4, I. & G. N. survey, flowed 725 barrels during the first day and 630 barrels on second day from regular pay at 3145-61 feet.

The Lefors pool, Gray County, contributed an unusually large well early last week when the Plains Drilling Company, which maintains headquarters at Amarillo, drilled one foot of granite wash pay to a total depth of 2556 feet in its G. H. Saunders 1 for an initial gauge of 2825 barrels of 41.5 gravity oil and about 12 million cubic feet of gas. This well dropped to 1600 barrels on the second day, and checked its rapid decline by flowing 1510 barrels on the fifth day. The well is located in the east one-half of the southeast quarter of Section 4, Block 1, A. C. H. & B. survey, and the first well flowed 60 barrels per hour when brought in last October at 2626-85 feet. The Texas Company owns the 80-acres adjoining on the west, and drilled in G. H. Saunders 7 early last week flowing 660 barrels, 30 per cent. water, during first six-hour gauge at 2650-61 feet. This well gauged 980 barrels, 50 per cent. water, when given a 24-hour test. Skelly Oil Company is drilling four tests on the southwest quarter of the same section, and early this week Saunders 4 was making 65 barrels daily from granite wash at 2750-97 feet, and drilling ahead at 2815 feet.

Tulsa.—John H. Markham, Jr., independent producer, is slated to become president of the Petroleum Corporation of America. It is being formed by Blair and Company, Fisher Brothers and Arthur Cutten as an oil investment trust. These interests have been acquiring stock in several oil concerns.

Clarence Bitting, managing director of Fisher Brothers, has been elected to the directorate of the Skelly Oil Company. Carle Conway, president of Continental Can Company, also was elected to the Skelly board.

A. K. Riddle, Shell Pipe Line Superintendent, who moved from Cushing, Oklahoma, to Texas recently to personally supervise the work now in progress on his company's West Texas-Houston line, is temporarily making his headquarters in Austin.

Humble Restricts Purchases of Howard-Glasscock Crude

BIG SPRING, Texas. — Curtailment of crude runs for purchase in the Howard-Glasscock County deep pay area by Humble Pipe Line Company early this week disturbed an otherwise stable crude market situation in the field, and the shutting down of a few wells confronted the Superior Oil Producing Company (was Moody), and Amerada Petroleum Corporation and Rycade Oil Corporation until other storage or pipe line arrangements can be perfected.

Although Humble Pipe Line Company has the largest line directly connected with the field, having completed one from Kemper last October, its crude purchases have been averaging 6000 to 8000 barrels daily, producers served by this line were notified early this week that the company would be unable to handle as much oil as heretofore, and would probably discontinue purchases for a while at least.

Humble Pipe Line Company built a 62-mile eight-inch line to buy oil in this area, and was expected to take up to 12,000 barrels daily.

Producers affected by Humble Pipe Line Company's crude buying curtailment are finding it difficult to get immediate relief from other lines serving the field. While the trio of refining plants to be placed in operation near the field shortly, with a combined daily skimming capacity of about 20,000 barrels are seeking to contract for oil when connections are given.

Shell Pipe Line Company is unable to give relief, owing to its million barrel concrete reservoir at McCamey being out of commission while repairing a leak, and its trunk line to Oklahoma is loaded. Its new line to Houston will not be in service until after about two months.

Magnolia Pipe Line Company's trunk line taps the field with a combination four- and six-inch, but the former is loaded with other West Texas crudes, and tanks are being built in Howard County to accommodate oil produced.

The Big Spring Pipe Line Company's four-inch line is about loaded in supplying crude to the Big Spring Refining Company's nearby plant.

Cosden Pipe Line Company will probably provide some relief, while the Great West Pipe Line Company's recently completed six-inch line is to be placed in operation shortly. Both of the latter are to supply three plants being completed shortly by Cosden & Company, Richardson Refining Company and Great West Refining Company, all being on adjoining sites east of Big Spring.

Production Extended

The 2500-foot horizon was extended more than half a mile to the northeast last week when Greene Oil & Refining Company's Clay 1, Section 127, pumped 10 barrels of 31 gravity oil per hour after shot in pay at 2470 to 2545 feet. This lease has four shallow pumpers.

Deeper drilling on the Plymouth Oil Company's Kloh Rumsey 1, which widened the Henshaw-Settles area one mile to the southwest early last week. Resulted in a substantial increase in oil at a total depth of 2296 feet, or 32 feet in the pay. This well swabbed 115 barrels of 32.8 gravity oil per hour, and has been given connection by Cosden Pipe Line Company, which is paying 80 cents per barrel for this grade of oil. Cosden Pipe Line Company is laying a six-inch line parallel to its present four-inch line now serving this section of the field, and will connect with the eight-inch carrier at the Roberts Ranch pump station, a distance of about five miles.

Hendrick South Extension Well Makes Strong Flow

Prospects of connection with O'Brien strengthened when Skelly well flows 500 barrels hour with slight cut; Magnolia buys big acreage

By H. H. KING
Staff Representative

SAN ANGELO.—Heavy production was developed Monday from an outpost well on the south end of the Hendrick field, thereby strengthening prospects of the producing structure extending three miles further south and connecting up with the O'Brien pool. Skelly Oil Company's Hendrick 1-C which was reported last week as showing for a well after drilling three feet of pay to a total depth of 3031 feet, increased its flow to above 500 barrels per hour, partially pinched, when deepened to 3040 feet. About five per cent. water is reported to be showing, but this is believed to be coming from a thin water sand logged at 3032 feet.

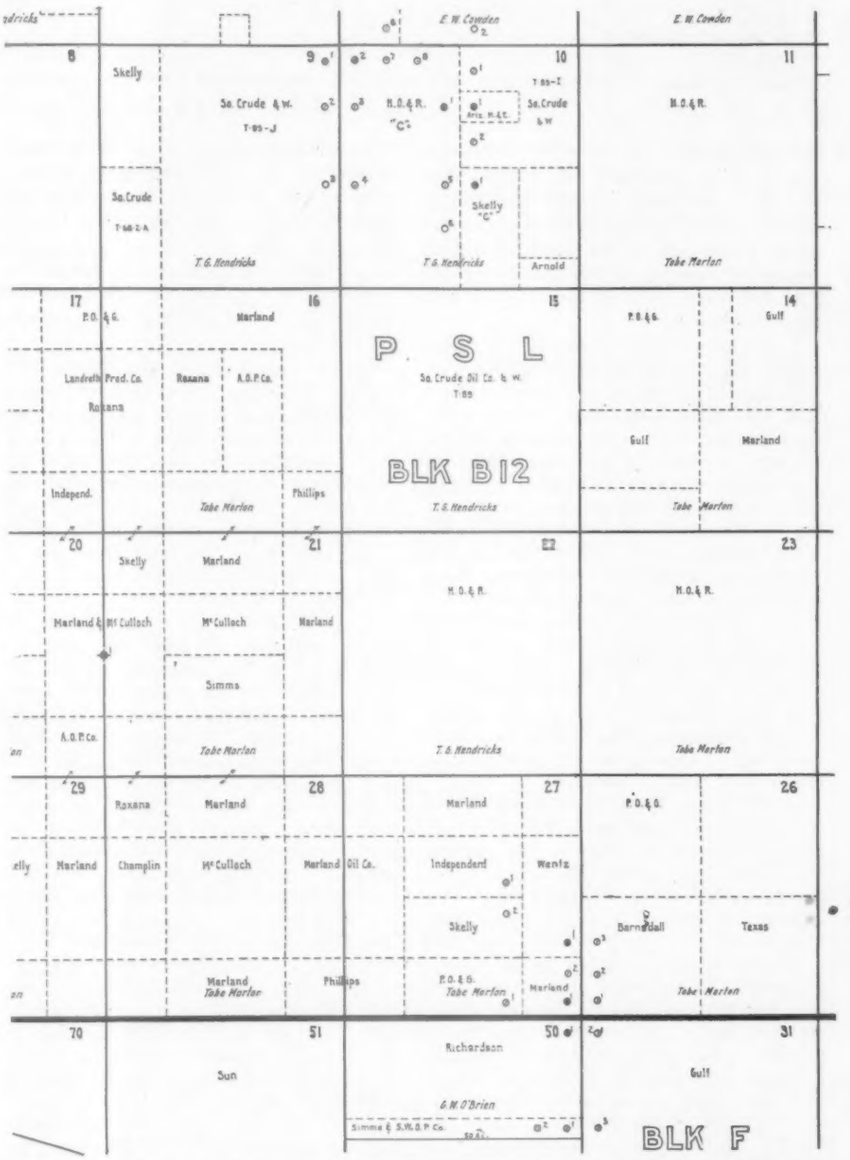
The trend of production in the O'Brien pool is taking a course toward the Hendrick field, and no dry holes have been drilled in between to kill the chances of the two areas being connected.

Skelly Oil Company's T. G. Hendrick 1-C is located in the northwest corner of the east one-half of Section 10, Block B-12, being the southernmost well in the Hendrick field, and early last week began flowing at the rate of 500 barrels daily from three feet of pay at a total depth of 3031 feet. A small amount of sulphur water appeared with the oil when the well was deepened to 3032 feet, while the actual gauge was 340 barrels of oil daily. This outpost well logged the top of the lime at 2600 feet, with a surface elevation of 2753 feet, thereby indicating normal structural conditions for further extensions to be made in a direct trend toward the O'Brien pool, which is three miles distant.

Humble Oil & Refining Company staked five new locations on its 320-acre Hendrick "C," lease No. 2, occupying the west one-half of Section 10, as a result of the showing made by the above extension, and indications are that this lease will prove to be the largest producing lease held in the field by this company. Humble Oil & Refining Company's Hendrick 2-C, Lease 2, located in the northwest corner of the tract, was completed last week flowing 440 barrels of clean oil per hour at 2830-2902 feet.

In the event the Hendrick and O'Brien areas are connected up, Humble Oil & Refining Company and the Southern Crude-R. A. Westbrook Interests are reasonably assured of the bulk of the producing acreage, as the former has two solid sections extending across the trend, while the latter hold lease on all of Section 15, which lies south of Section 10.

The O'Brien pool, with two small flowing wells, and three nearby tests showing sulphur water in the upper level of the expected pay horizon, has been a disappointment. The pool was uncovered October 15 by Sid Richardson et al's O'Brien-Stockton Land Company 1, located in northeast corner of Section 50, with an initial flow of 2100 barrels daily at 2805-2975 feet, and water appear with the oil shortly after completion. The well is flowing about 282 barrels of oil daily, but is cutting about 13 per cent. Barnsdall Oil Company's Tobe Morton 1, a northeast offset to the discovery well, is lowering casing to try and shut off water at 3128 feet, while Gulf Production Com-



Showing the relation of the O'Brien pool, southern Winkler County, to the south end of the Hendrick field, which is at the top of the map. The connecting up of these two areas now appears possible.

LOG DATA ON SOUTH WINKLER COUNTY OPERATIONS

Company-Farm-Well Number—	Elev.	Top Salt	Top Lime	Pay Horizon	Total Depth	Date Comp.	Initial Prod.	Remarks
Arizona Mining & Eng. Company's								
T. G. Hendrick 1	2759	1390	2607	2845-3004	3004	10-13-28	2500	F 150
Barnsdall Oil Company's								
Tobe Morton 1	2730	1890	2884		3128			UR account water
Tobe Morton 2					1435			Drl.
Tobe Morton 3								Cellar
Gulf Production Company's								
G. W. O'Brien 2	2719	2063	2723		3082			s/sul water. DRL.
G. W. O'Brien 3	2721	2420	2700		3082			UR account water
Humble Oil & Refining Company's								
Hendrick 1-C, Lse 2	2758		2575	2811-2900	2900			DRL HFO
Hendrick 2-C, Lse 2	2762		2415	2830-2902	2902	1-16-29	9500	F 600
Hendrick 3-C, Lse 2		1430			2448			Cem. cas
Hendrick 4-C, Lse 2								Rig
Independent Oil & Gas Company's								
Tobe Morton 1								Rig
McCulloch-Marland et al's								
Tobe Morton 1	2750	2110	3262		3504	9- 7-27		Sulphur water 3320 ft.
Marland Prod. Company's								
Tobe Morton 1	2722		2651	2830-2895	2895			DRL HFO
Tobe Morton 2		1620			2365			DRL
Prairie Oil & Gas Company's								
Tobe Morton 1	2731	1540	2815		3072			Sul. water 3060 ft.
Simms Oil Company & Southwest's								
Geo. Sealy 1	2731	2070	2661		2679			Stdz rig
Geo. Sealy 2								Rotary rig
Skelly Oil Company's								
T. G. Hendrick 1-C	2753		2600	3028-	3040	1-21-29	15,000	
Tobe Morton 1								Cellar
Southern Crude-Westbrook's								
T. G. Hendrick 1-I-T-89	2765		2724		2870			DRL
2-I-T-89	2756		2730		2840			DRL
1-J-T-89	2764		2507		2540			DRL
2-J-T-89					2100			DRL
L. H. Wentz Interests'								
Tobe Morton 1	2729	1706	2672	2842-3005	3005	12-31-28	700	F 530
Sid Richardson et al's								
Stockton-O'Brien 1	2722	2035	2648	2805-2975	2975	10-15-28	2100	F 282

pany's O'Brien 2, an east offset to the discovery well, developed salt and sulphur water in sandy-lime at 3072 feet, but is drilling ahead. Gulf's O'Brien 3, located about a half-mile to the south of No. 2, is straight reaming at 3007 feet to try and case off water at 3082 feet in lime and shale formation.

L. H. Wentz' Tobe Morton 1, three locations north of the O'Brien discovery well, flowed 30 barrels per hour at 2842-3005 feet when completed December 31, with six per cent. water showing before pinching the flow for proration. Marland Production Company's Morton 1, north offset to the discovery producer, was flowing 60 barrels clean oil daily by heads while drilling pay at 2830-95 feet late last week. Prairie Oil & Gas Company's Morton 1, three locations west of the above new producer, is shut down temporarily with hole full sulphur water at 3060-72 feet, but will be deepened if others in the pool are successful in drilling through the first water horizon and making commercial producers. The Texas Pipe Line Company is running all oil produced in the O'Brien pool for purchase.

In the Yates field, Mid-Kansas Oil & Gas Company-Transcontinental Oil Company's Yates 27-B, Section 61, gauged 1865 barrels of clean oil during a 45-minute open flow test, through two four-inch and a pair of 6⅝-inch flow lines, from regular lime at 1175-1414 feet. The California Company failed in its efforts to extend the southwest side of the field into new territory during the past week, encountering sulphur water in two semi-wildcats. This company's M. A. Smith 1, Lease 4, Section 15, encountered water at 1649-52 feet, and suspended operations at 1671 feet, while Smith 1, Lease 5, Section 16, is trying to lower casing to shut off water struck at 1630-34 feet, with a total depth of 1638 feet after coring from 1616 to 1638 feet.

Geo. Anderson et al's wildcat test on University lands, located about 15 miles west of the Yates field, is plugging back from sulphur water horizon at a total depth of 1998 feet, to try and save a seven million cubic foot flow of gas encountered at 1963-67 feet. This fuel will be utilized in the drilling of more tests on nearby leases.

Texon Oil & Land Company's University 1-B, Big Lake field, registered a new peak flow of high gravity oil during the 24 hours ending Monday by gauging 1640 barrels and 16,804,000 cubic feet of gas from the greatest known producing horizon at 8500-23 feet. This well produced 1575 barrels on the day before, or 21 barrels under the high mark set on the previous day. The peak flow of gas is 17,505,000 cubic feet.

Magnolia Petroleum Company has recently joined in the lease play that has been active on the Texas side of the New Mexico line, and purchased the fee interest in 58,110 acres of ranch lands owned by Mrs. Rachal Havemeyer, New York City, in southern Gaines County, for $6.00 per acre, with the latter retaining one-eighth of the mineral rights. Magnolia Petroleum Company closed a deal last week for the purchase of six adjoining sections, involving 3840 acres, in southeastern Gaines County, from H. L. Jarboe for $6.00 per acre, with no reservations. The latter property is fenced and has a house on it. This plan of acquiring protection acreage without expensive rentals and drilling obligations was used successfully by Magnolia Petroleum Company in the Texas Panhandle district, and with prospects of a general overproduction of crude extending for some years hence the buyer is able to make land investments that involves comparatively little carrying costs. Most of the fee land can be leased for grazing at a annual rental that will meet tax bills.

Texas Company to Open Galena Signal Refinery

Houston.—The Texas Company, which last year bought the properties of the Galena Signal Oil Company of Texas, plans to remodel and enlarge the Galena refinery on the Houston Ship Channel; and now has engineers at work preparing plans for the proposed replacements and enlargements. When their plans are submitted and approved, construction will begin immediately; and the changes are expected to be completed within six months from now.

The above information was verified by R. C. Holmes, president of The Texas Company, while here last week; but no statement was given out as to the exact changes that would be made, or the proposed capacity of the plant.

Mr. Holmes spent several days here, inspecting properties of the company; and was accompanied here by F. P. Manley, vice-president in charge of refineries; and W. S. S. Rodgers, vice-president in charge of sales. They were joined here by R. Ogarrio, vice-president in charge of production, who had been on a tour of inspection of the company's production departments.

Situated on the Houston Ship Channel, the Galena Signal refinery is accessible to the largest sea-going tankers; and it constitutes the second refinery of The Texas Corporation on tidewater in Texas, the other being at Port Arthur—one of the largest refineries in the world.

The refinery will obtain its crude supply through pipe line connecting with the Galena tank farm on the Wallisville road, also acquired from the Galena Signal Oil Company of Texas. It is about four miles from the refinery to the tank farm. In addition, The Texas Company will, without laying additional pipe of consequence, have pipe line connection with the line leading out of the West Columbia field, and with the new West Texas to Port Arthur line, now under construction. The line out of West Texas will lead through Humble, and from there a line already connects up with the Galena tank farm, which in turn has pipe connection with the refinery.

Standard Oil of Indiana Had Favorable Year

Chicago.—It is estimated here that the Standard Oil Company of Indiana will probably show profits of approximately $80,000,000 for the year 1928, which represents nearly $9.00 a share on the 9,231,540 shares issued. Unofficial estimates place the amount of cash and government securities of the company at approximately $110,000,000, or an increase of nearly $24,000,000 over 1927. Standard Oil Company of Indiana has one of the best records of consistent growths in business and profits among the major companies.

Advanced Geology Encourages West Oklahoma Drilling

Area has 67 wildcat tests; are active over area of 30 counties; recent successful wells serve to further encourage campaign

By WARREN BAKER
Staff Representative

TWENTY years ago when the petroleum industry of Oklahoma was in its infancy it was the general belief of oil men that oil production would not be found far west of Glenpool, the famous field of those days. But, since then there has been a steady westward march of the producing area within the state. In 1915, when the Drumright-Cushing field was opened it was regarded as the western boundary. The years following this strike saw development in the district surrounding that vicinity, including several important new pools, but the western half of the state was not taken into consideration until the opening of Garber field, and then only slightly. It has been only during the past two years that it has come into prominence.

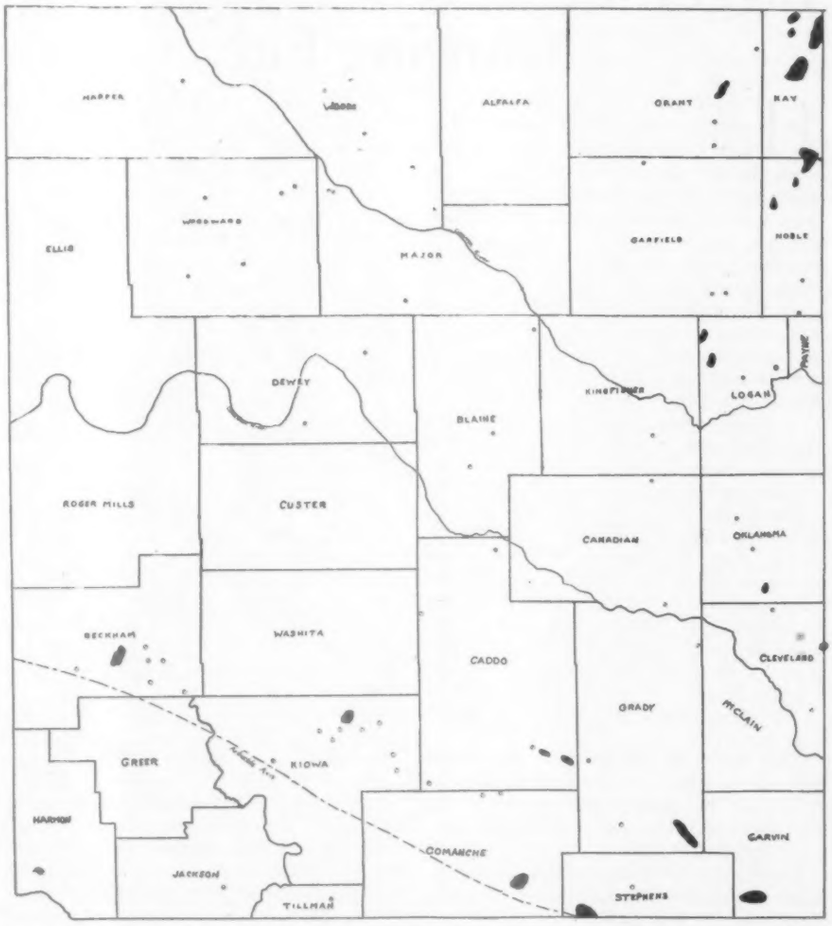
Production now has been found in Western Oklahoma, and a broader knowledge of structural conditions, through improvement in geology, and magnetometer, core drill and torsion balance work, that this vast territory is regarded as highly prospective oil producing area.

Producing formations are known to dip sharply to the west and will require deep tests to read the producing horizons. This is not regarded as a serious handicap with improved methods of drilling. The cost is high and development will be slow, even in the vicinity of wildcat strikes, since operators cannot afford to drill many holes that cost upwards of $125,000 each unless they are reasonably sure of finding production. The great cost also limits to a large extent the play to the bigger companies. When activity reaches its peak in this area, as it is generally expected to in a few years, it is probable that the complex of Oklahoma operating companies will be changed to a large extent. The small concerns will probably turn more and more to royalty, while the larger ones will probably figure in a partner of two to share in the cost of wildcat tests.

A few years ago there was an extensive leasing campaign along the Canadian River. The area had been pretty well studied by core drills and other structural mechines and evidence of their successful discoveries is shown by the large campaign of leasing and blocking that followed. The majority of the major companies participated and many very large blocks were taken. At the same time the extreme north part of the state was being studied and leasing and blocking being done on a smaller scale. Since this time there has been a steady leasing play in that district, which now has covered most of the great territory. From time to time it increased after important discoveries and today it is at its height, due largely to the Indian Territory Illuminating Oil Company's well at Oklahoma City.

Much has been said about this blocking campaign, but little has been said about the present exploration in the region. There are 67 wildcat tests in Western Oklahoma. These operations are scattered throughout the district, including 24 of the 30 counties in the area. There are two distinct plays. In the southern part of Western Oklahoma there is a shallow campaign in the vicinity of the Arbuckle Axis. Production has already been found in this region and it is the center of the most intensified play now. None of the production has been in the class that has disturbed the crude market and it is being carried on chiefly by individuals.

The campaign that is being mainly watched is that covering the district just south of the Canadian River, running north into Southern Kansas. This is the great unexplored area, where the formations lay deep. A few early tests in the district were not drilled deep enough and are not taken into consideration by the present day operators. The favorable attitude of operators toward the territory is shown on the accompanying map, which outlines the widespread play. In a short time much additional knowledge of West-



Western Oklahoma, showing wide distribution of wildcat activity in that section

ern Oklahoma will be revealed by these tests.

The development of this region has been materially slowed up by the Greater Seminole district. Sufficient crude has been produced in that area to more than fulfill the needs of most of the companies, and they were content to let their Western Oklahoma holdings go untested temporarily. Rentals on the big blocks are high, and some companies are starting to test them rather than continue to pay the big yearly rentals.

The first deep pay field in Western Oklahoma was the Garber field. After several years of development in upper formations big production was found in the siliceous lime. It was quickly developed and sent production of that field to nearly 75,000 barrels daily. During its development the largest well yet completed in Oklahoma was obtained, Sinclair Oil & Gas Company's well on the Hartley farm, in the northern part of the field. The well flowed approximately 28,000 barrels the first 24 hours.

Garber field was followed by a conservative wildcat campaign. Many were still not satisfied that wildcatting in the deep area would ever pay. Shortly afterwards Roxana Petroleum Corporation's McCully 1, in Section 30-19-4w, northern Logan County, opened the McCully field; this well had an initial production of 2800 barrels from the Wilcox sand at 5987 feet, the deepest commercial producing horizon then in the Mid-Continent. The feature of this well has been its steady production. It is still producing more than 1200 barrels natural. The oil has a very high gasoline content. The well has produced more than 1,115,265 barrels. A half dozen wells were started, all but two of which found production. Since then the field has experienced a steady development and now has 17 producing wells with a large number drilling, and many proven locations. The largest well was recently completed, extending production to the west, where the best part of the structure is now thought to lay. The field has produced approximately 2,850,000 barrels and is producing over 10,000 barrels daily.

The most recent strike in Western Oklahoma, and one that has probably done more to encourage development than any other, is the Indian Territory Illuminating Company's strike in Section 24-11-3w, south of Oklahoma City. This well came in for 5800 barrels from 6402 feet, from what is considered Hunton lime. It shows that formations in Western Oklahoma will be found lower in the southern part than in the north. The most intensive drilling campaign in any one vicinity of Western Oklahoma is fast developing around this discovery. Twenty-seven locations have been made, and the majority of these are being started. In addition, several wildcat tests are starting and doubtless in the future many others will follow.

Biggest Fannett Well Runs Wild Following Fire

HOUSTON.—Gulf Production Company's Burrell 2 at Fannett, Jefferson County, which came in last week as the largest well of that dome, soon afterward catching fire, has not yet been brought under control, although the fire has been extinguished. On Tuesday of this week preparations were being made to skid a newly erected steel derrick over the well and to attempt to put on well connections; and in the meantime the well was shooting oil into the air, making a yield estimated at 1200 barrels, including 10 per cent. sediment and water.

A considerable part of the production is being saved, in spite of the well being out of control; and the gravity of the oil is reported to be around 34 degrees.

The production is from 12 feet of sand at a total depth of 5617 feet; and 6⅝-inch casing is set at 5430 feet, while 4½-inch screen is set in the oil sand. After the plug was drilled the well came in for an estimated 3000 barrels; and soon afterward the well caught fire through friction, resulting in the destruction of the rig and derrick, and necessitating erection of the new derrick which will be placed over the well.

This new well, Burrell 2, is an important one in that it is the first large producer of the dome, although it is the eighteenth test that Gulf Production Company has drilled there.

Fannett is approximately 15 miles southwest of Spindle Top, and about 18 miles southeast of Sour Lake.

Fannett dome was outlined by seismograph in 1925, and a large percentage of the acreage on and around the dome was leased by Gulf Production Company, which is the only operator there; and which has kept drilling consistently on it, running one or two rigs all the time.

Among the 18 tests drilled, several encountered cap rock as high as 1000 feet; while various others were abandoned below 5000 feet. The deepest of all the tests, Bordages 3, after having slight showings of oil at 5300 and 5800 feet, was finally abandoned at 6490 feet in shale.

The first oil found at Fannett was in Bordages 2. It began drilling in the spring of 1926, and the following November swabbed some oil at 4993 feet; later, deepened to 5035 feet, it had a gas blowout, wrecking the derrick. In January, 1927, it found another oil show at 5052 feet, and at that depth came in January 20, making 50 barrels of 28 gravity oil per day, flowing by heads; the production being from 20 feet of sand; however, the well went dead two days later. It was finally abandoned in heaving shale at 5300 feet.

Gulf Production Company's next success in the field was the completion of Bordages 6 in September, 1928. That well came in at 4760 feet, swabbing 135 barrels net oil; and afterward, when put on the pump, it was completed for 150 barrels. It has now declined to a 10-barrel pumper. The new well, Burrell 2, is 600 feet southeast of Bordages 6.

The fire at Burrell 2 was extinguished Friday morning at 11 o'clock, by means of steam from six boilers.

Elk Hills

San Francisco—Recent adverse decisions concerning certain lands in the Elk Hills Naval Reserve do not in any way affect the validity of lands held in the district by Standard Oil Company of California, according to an announcement made by officials of the company. The decision concerns a part of a section of land in Naval Reserve No. 1, on which the company has a few small producing wells.

Derrick Up for 2nd Test New Humble Horizon

Houston. — Cullen & West Production Company's R. B. Morris 1, which discovered a new, deep sand in the southeast part of the Humble field at 5347 feet, continues a good well, making around 1700 barrels per day; and the owners of that discovery well have a derrick up for their next test in the area, Morris 3.

This new location is 100 feet east of the west line and 245 feet south of the north line of the W. T. Charles survey. Location of the discovery well of the new deep sand is 525 feet east and 40 feet south of the northwest corner of the W. T. Charles survey.

It came in about two weeks ago, making 2500 barrels of 44 gravity pipe line oil per day through a one-half inch choke.

Boosted by the production of this well, the Humble field during the week ending January 19 had an average daily output of 5300 barrels; as compared with about 3500 barrels before this well came in.

Tulsa.—For its annual meeting on transportation the Mid-Continent section of the American Society of Mechanical Engineers considered the subject "The Economics of Electric Pipe Line Pumping."

The paper on this subject was prepared by J. B. Thomas, chief engineer of the Texas Power & Light Company of Dallas. He was unable to be in Tulsa, January 18, so the paper was read and later discussed.

The discussion was led by F. E. Waterfield, engineer of the Oklahoma Pipe Line Company of Muskogee. Joseph W. Hayes of the Mid-Continent Petroleum Corporation, presided in the absence of W. G. Heltzel, chairman of the Mid-Continent Section.

Salt Lake City, Utah—The Western Venture Corporation's well on Vernal Monocline, seven miles southwest of Vernal, Utah, drilled a foot deeper into the sand last week at 1283 feet and reports that the oil and gas showing increased to such an extent that it was thought advisable to shut off all water before continuing. When this work is completed the well will be drilled in.

Week's Developments Change Allen Field Prospects

St. Louis north extension wells cutting; failure indicate that Wilcox sand may not be so good as indicated in Maud district

By WARREN BAKER
Staff Representative

TULSA. — Several important disappointments, bordering on surprises, in the Allen pool featured Oklahoma development during the past week. A week ago this field looked like a very promising major prospect, but today the picture is greatly changed—at least for the time being.

T. B. Slick's Wyetha 1, NW SW SW, Section 24-5n-7e, which last week looked as if it would extend the producing area 2½ miles southwest, is drilling ahead at 4465 feet, in the Simpson sand. This test made two flows during 24 hours totaling 180 barrels. It is running very low and expected to find water in the Wilcox sand. So promising did this test appear last week that several of the shallower producers were started deeper. Sunray Oil Company's Jonana 1, north offset to the Slick well, is drilling at 3840 feet. Sinclair Oil & Gas Company's Jefferson 1, diagonal northwest offset, has topped the Viola lime at 4080 feet and is setting the eight-inch casing at 4191 feet. It also appears to be running low.

Sunray Oil Company's Harjo 1, NEc SE SW Section 7-5n-8e, south offset to Sinclair Oil & Gas Company's Wilcox sand discovery well at Allen, has picked up water in the Wilcox sand at 4283-90 feet. Although it was known that this test was running lower than the discovery producer this development came as a general surprise. Louisiana Oil Refining Company's Statler 2, south offset to Sunray Oil Company's Harjo 1, has topped the Sylvan shale at 4084 feet and is drilling at 4165 feet.

These developments are causing a complete revision of the direction of the play from the discovery well. Previously, it was generally thought that the pool would lay to the south and west. Sunray Oil Company's dry hole now indicates that the Sinclair well may be on the south edge.

The only favorable development of the week at Allen was the deepening of the Sinclair Oil & Gas Company's Amos 2-B, SE NE SW Section 7-5n-8e, discovery Wilcoxer, and its increasing production. The well made as high as 1850 barrels in 24 hours. Total depth is now 4173 feet.

Oklahoma City Well Tests Upper Pay

Mid-Continent oil men focused considerable attention on the Oklahoma City district during the past week, as Indian Territory Illuminating and Foster Petroleum Companies' Trosper Park 1, S NE SW Section 13-11-3w, tested out the Tonkawa series. The top of the sand was found at 3971 feet and at 3994 feet the well was making 12,000,000 feet of gas and flowed 193 barrels in 14 hours. It will be drilled deeper. The original Oklahoma City well found 25,000,000 feet of gas in this horizon. The other wells at Oklahoma City are making good time and the first of them will soon be testing out the above formation. The discovery well continues to produce more than 5700 barrels per day.

The wildcat of Superior Oil Corporain SW NW SE Section 24-8-2e, near Macomb, between Oklahoma City and the Seminole district, has made a little hole. Total depth is 4958 feet in the Hunton lime. It is making 1½ bailers of water per hour and has about 300 feet of oil in the hole.

Wilcox Sand Failures in Maud Field

The Wilcox sand producing ability in the Maud district may not be as high as first estimated. This is indicated by the finding of three failures in that formation during the past week. Two of these are in the vicinity of the discovery Wilcox sand well, with the other in the Misener-Hunton producing area where it would hardly be expected to find production.

Barnsdall Corporation's Fife 3, NWc SE NW Section 14-8-5, has 1000 feet of water in the hole from the Wilcox sand at 4352-55 feet. The same company's Fife 2, north offset No. 3, has 3500 feet of water from 4411-27 feet in the Wilcox sand. These two wells are one-quarter of a mile southwest from the discovery producer. Although the producing area was not expected to go far in this direction these two locations were generally looked upon as probable productive ones.

Gypsy Oil Company's Bourassa 2, NEc Section 7-8-5, found water in the Wilcox sand from 4449-54 feet. It is a south offset to the Phillips Petroleum Company's failure in the Wilcox sand.

Despite these failures at Maud, there were enough new producers completed to swell the total number of producing wells to 34 and to establish a new peak output of 31,789 barrels. These wells were in the Misener and Hunton pays of western Maud. The increasing recovery of western Maud continues to boost the recovery of Greater Seminole. It made 293,793 barrels from 1331 wells during 24 hours ending 7 a. m. Monday.

St. Louis North Extension Wells Cutting

T. B. Slick's Davis 1, SW NW NE Section 18-7-5, north extension well to the St. Louis pool, started cutting 2½ per cent. during the past week. The output of the well was pinched to 3900 barrels. This is the first water that has appeared in the producer drilled in about a month ago.

The Mission field looks more disappointing each day as the lower formations are found running low by additional wells. Indications are that many will be dry holes when they are permitted to drill in the middle of February. There are now 76 drilling operations in the field, and the majority of these will be ready to drill in on that date. It is very probable that the number of tests to start the first of February will be greatly reduced as a result of the poor outlook of the present crop of tests.

Interest Increases in Western Oklahoma

Interest increased in western Oklahoma during the past week as a result of several developments. The most important was the Bu-Vi-Bar Petroleum-Gypsy Oil-Indian Territory Illuminating Oil-Prairie Oil & Gas Companies' Kelly 1, SE SW Section 10-25-15w, south of Avard in Woods County. This rank wildcat passed out of the red beds at 1350 feet. The bottom of this formation was generally anticipated at about 1850 feet, and the higher termination is thought to indicate a structural high.

The most important development in Major County was the spudding of Wilson Oil & Gas Company et al's Creech 1, NE NE SW Section 4-24-16w, which is about a mile south of the Lester & Haynes' Randeau 1, which found several showings of oil. Reports are that the Randeau test will be drilled deeper very shortly. The Creech test is on a block of acreage and is expected to go below 5000 feet.

Prairie Oil & Gas Company and Transcontinental Oil Company's Wilbur 1, NE NE NE Section 23-23-17w, Woodward County, is standardizing at 4265 feet. W. J. Donnelly's Dickens 1, SE SE NE 26-15-12w, Blaine County, is drilling below 4425 feet. Crawford and McKenna's Sturgeon 1, NE NE SW 27-16-6w, Kingfisher County, and west of the McCully pool of Logan County, was drilling out the cement at 4870 feet.

Several new tests were announced for the McCully pool of Logan County. Shell Petroleum Corporation is taking the lead in this work in developing its large holdings. Most of the new locations were in the western part of the pool, where the largest well yet found in the area was brought in recently, and which carried production a short distance west.

Gulf Coast Field Developments

Vacuum Oil Company Opens New South Louisiana Field

HOUSTON.—A new Coastal field of apparent importance has been opened by the Vacuum Oil Company near Roanoke, Jefferson Davis Parish, Louisiana, through the first test in an area outlined by means of the torsion balance. This well is the DeVilbiss 1.

On Tuesday of this week Vacuum was preparing to run in three-inch tubing with the expectation of making the well flow through it.

Total depth of the hole is 4201 feet, the drill having penetrated 13 feet of a sandy shale with a fair oil showing. The bottom five feet of that pay was particularly rich in oil.

Nine and seven-eighths-inch casing was set at 4173 feet; and after a joint of screen was set, the well was washed for several hours, following which it began producing oil. The oil displaced considerable wash water, but the well has not entirely cleaned itself. The oil which it is yielding is 23 gravity, Grade "A" coastal crude. It is believed that when the tubing is run, the well will flow through the smaller pipe.

DeVilbiss 1 is 1900 feet south of the north line and 2000 feet west of the east line of Section 14-9s-4w.

This area is three miles north of the town of Roanoke, and about seven miles east of the old Welsh field. It is approximately 10 miles west of the Evangeline or Jennings field.

Although the presence of a dome in this new area has not been actually proved by drilling, it is assumed that a salt dome exists there; it having been indicated through the torsion balance survey.

It is located in typical salt dome territory, being in direct line with Starks dome, Edgerly (where salt was actually drilled into for the first time last year), Sulphur dome, Evangeline, Bayou Bouillon, and various newly discovered domes. It is also in line, however, with Lockport and Welsh, where salt domes have not been found (although they may exist, but at more than the usual depth).

Before Vacuum Oil Company became interested in this Roanoke area, through the revelation of the torsion balance, the Osage Oil Company about three years ago drilled a well one and one-half miles north of the present well, but abandoned at 3539 feet as a dry hole.

Vacuum Oil Company has a block of approximately 7000 acres around DeVilbiss 1, having almost complete control of the area. The principal acreage of interest held by another company is a 160-acre Fee tract of the Rycade Oil Corporation, located 2000 feet from the producer.

The Roanoke area is particularly well situated from the standpoint of transportation, being accessible by a hard-surfaced road. Roanoke, which is only three miles south of the field, is on the Old Spanish Trail, a national highway, and on the Southern Pacific railroad.

Vacuum Oil Company has made location for its next test in the area, Earl 1; and timbers are being moved to it. This location is 300 feet north and west from the southeast corner of the northeast quarter of Section 15-9s-4w.

On Tuesday of this week, Clyde M. Bennett, manager of the crude oil department of Vacuum Oil Company, accompanied by William B. Sutton, head of the land department, left the company headquarters at Houston to be present at the test following the tubing of the well.

Salt Water Appears in Clay Creek Field

Brenham, Texas.—Early appearance of salt water in the first group of shallow oil producers completed by the Sun Oil Company in the Clay Creek field, Washington County, has caused a revision of production possibilities of this interior salt dome area. Sun Oil Company controls all the acreage surrounding its discovery lease, and delay in getting tankage and pipe line facilities necessitated the shutting in of the wells, with indications that this has had a harmful effect on the producers.

Sun Oil Company's Geo. F. Grote 2, which was completed November 12, 1928, flowing 210 barrels per hour of 25-26 degree gravity clean oil at 970-1392 feet, was shut in for two months, and when connected with six-mile four-inch line leading to car rack at Gay Hill developed 10 per cent. cut oil. A treating plant was completed on the lease January 17, and this well will be tested with various sized chokes before plugging back. Sun Oil Company's Geo. F. Grote 1, which uncovered the pool October 15, 1928, flowing 65 barrels daily by heads at 1140-54 feet, was deepened November 28 for a big increase in oil and gas production, but encountered water when carried to 1474 feet. This well has been plugged back to 1358 feet, and tested 650 barrels daily December 26.

Sun Oil Company's J. Grote 1, located a short distance north of the above big well, cemented six-inch casing on top of first show oil at 1233 feet, and when deepened to 1341 feet last week tested mostly water. This test is to be plugged back. Sun Oil Company's Eimann et al 1, located a short distance east of production, missed the shallow pay and is plugging back from a total depth of 2598 feet to test shows of oil passed up between the 1800-1940-foot level, while L. Marcus 1, located southwest of production, was drilling at 3320 feet late last week.

The first crude shipments from the Gay Hill rack were made January 8, when a freight rate of 10 cents per 100 pounds went into effect between this point and export terminals near Smiths Bluff, Texas. A posted price of 85 cents per barrel has been announced for the Clay Creek crude.

Texas Company Locates Test in Terrebonne

Houston. — The latest location which The Texas Company has made on the properties it acquired from the Louisiana Land & Exploration Company in Southern Louisiana is the Bay Coon Road B-1, the fourth location made under the agreement in Terrebonne Parish, and the sixth on the entire properties.

This new location in Terrebonne Parish is 875 feet south and 250 feet east of the northwest corner of the section in Bay Coon Road in Section 17-22s-18e.

The other three locations recently made by The Texas Company in Terrebonne Parish are: Lake Barre 1 in Section 30-21s-20e; Lake Pelto B-1 in Section 8-23s-18e; and Timbailer A-1 in Section 19-23s-20e.

The remaining two locations which have been made on the Louisiana Land & Exploration Company properties are in Cameron Parish: Calcasieu Lake B-4 at East Hackberry and Calcasieu Lake A-3 on the dome in the south part of Calcasieu Lake.

All six of these locations are off shore in bodies of water, and as they are difficult of access, work on them will necessarily be slow.

Houston.—Average daily production of the Salt Flat field, near Luling, Caldwell County, was around 14,000 barrels during the week ending January 19. A high mark of 14,463 barrels was registered January 17.

Several producers and a few failures were completed in the field during the week; but none of them were of unusual importance.

Houston.—Pure Oil Company's Bruce 2, on Bethel dome, Anderson County, East Texas, has drilled into salt at 3448 feet; and is the second test to have encountered the salt.

This interior salt dome was discovered and outlined through geophysical work in the Spring of 1927. The first test drilled there, Cook 1, hit salt at 1600 feet. The second test, Bruce 1, was abandoned dry at 4000 feet. Bruce 2 is the third test of the dome. It is 850 feet north and 900 feet west of Bruce 1.

PERSONAL MENTION-MEN YOU KNOW

Secretary William F. Whiting, of the Department of Commerce, has appointed Scott Turner, Director of the Bureau of Mines, as representative of the Department of Commerce on the fourman Advisory Committee of the Federal Oil Conservation Board. The other members of the Committee are Major General Edgar Jadwin, War Department, Rear Admiral Harry H. Rousseau, Navy Department, and George Otis Smith, Geological Survey. The board is composed of the Secretaries of War, Navy, Interior, and Commerce.

Miss Mollie Hamer, of the Rycade Oil Corporation, and Raymond Ford, Williamsport Wire Rope Company, were married at Houston, January 19, and left for New Orleans for a wedding trip of two weeks.

Walter H. Ritterbusch, assistant superintendent of the land department and in charge of Central West Texas activities of the Phillips Petroleum Company with headquarters at San Angelo, has resigned after more than five years of continuous service with the company, to engage in the royalty business, and will remain at San Angelo. Ritterbusch will be succeeded by L. K. Eastman, who is being transferred from the Wichita, Kansas, office of the Phillips Petroleum Company.

Breckenridge S. Walker, capitalist and chairman of the board of directors of the Landreth Production Corporation, died at his home in Fort Worth, January 16, after a brief illness. Mr. Walker was a native of Stevens County, Texas, and amassed a fortune through royalties and development of production from his ranch lands in the county. He was active in banking circles, and served as mayor of Breckenridge, county seat of Stephens County, prior to moving to Fort Worth a few years ago. Funeral services were held January 17, with burial in a Fort Worth cemetery.

Wm. Hoskinson, superintendent of gasoline plants in Oklahoma for Magnolia Petroleum Company, has returned to headquarters at Oklahoma City after visiting with his mother during her illness at Sistersvile, West Virginia.

Lee Bivins, 62, mayor of Amarillo and owner of about 500,000 acres of proven and semi-proven oil and gas producing lands in the Texas Panhandle district, died suddenly January 17 while on a visit at Wichita Falls.

Dr. Van H. Manning, formerly director of the United States Bureau of Mines and director of Research for the American Petroleum Institute, and more recently connected with the Petroleum Research Corporation, sailed early in January for Havana to take up his new duties as Consulting Petroleum Engineer to the Cuban government. It is understood that a survey will be made to develop the possibility of oil production in commercial quantities. Cuba has a production of around 2000 barrels per year of very light oil, ranging between 55 and 60 gravity, which is sold to the Havana plant of the Standard Oil Company of New Jersey.

Frederick G. Clapp has made recent trips to England and Switzerland and has returned to Paris where his family is spending the winter.

John C. Townes, who is retiring as general counsel of the Humble Oil & Refining Company after 10 years of service in that capacity, was honored by a banquet Monday night at which officials and employes of the company's general offices at Houston were hosts. Major Townes will enter the private practice of law at Houston.

Industry Mourns Passing of R. L. Welch

New York.—The industry mourns the passing of Robert L. Welch, who died suddenly January 21, in Phoenix, Arizona, where he had gone a few days before from New York.

No more complete story of Mr. Welch's life could be told than that given members of the American Petroleum Institute by W. R. Boyd, Jr., executive vice-president of the Institute upon receiving word of Mr. Welch's death:

"Bob Welch has passed to the great beyond. He has been the active executive officer of the Institute throughout its existence. How well he has performed that difficult and nerve wrecking obligation is too well known to thousands of oil men to require comment. During the years I was his assistant, his intimate companion and his friend, I knew him. If he had been my own brother the news of his death could have been no more shocking.

"Two years ago his nervous system collapsed, and for the past year he has been very ill. However, his medical advisors have constantly expressed the hope that he would ultimately recover.

"Bob was born in Iowa, February 5, 1879. He started his career as a telegraph operator. He knew poverty, and worked his way through school, continuing as night telegraph operator for the Western Union. He was a graduate of Des Moines College, the University of Chicago, took a law degree at Northwestern University, and did postgraduate work in law at Harvard University. He made a name for himself as an Iowa lawyer, and his conspicuous ability led him into broader fields of activity.

R. L. WELCH

"His association with the oil industry began as counsel for the Iowa Oil Jobbers Association about 15 years ago. Next he became counsel for the Western Oil Jobbers Association in Chicago, after which he became secretary and counsel for the Western Petroleum Refiners Association at Kansas City. He functioned brilliantly as a member of the National Petroleum War Service Committee of which the late A. C. Bedford was chairman. When the institute was organized Bob Welch was unanimously chosen to become its active officer and to lead its destiny.

"The oil industry has lost a faithful friend and servant who for more than 15 years has given his best. He will be mourned by the thousands of oil men who knew him and who appreciated his invaluable service. Those of us who served with him here will affectionately cherish his memory always."

H. M. Wyatt, 36, drilling contractor of Shreveport, Louisiana, died January 20, in Houston, while on a business trip. Funeral services were held in Kansas City, his former home, early this week.

Kirby Smith recently joined the sales force of J. H. McEvoy & Company and is located in the Gulf Coast territory.

R. C. Holmes, president of the Texas Company, accompanied by several other officials of that company left Houston Sunday, following several days here inspecting company properties and attending to other business. They went to California, to inspect the recently aquired properties of the California Petroleum Corporation. Mr. Holmes was accompanied to Houston by F. P. Manley, vice president in charge of refineries, and W. S. S. Rodgers, vice-president in charge of sales; and they were joined in Houston by R. Ogarrio, newly elected vice-president in charge of production, who had just completed a tour of inspection of the various production divisions of The Texas Company. Mr. Manley expected to stop off while enroute to California at El Paso, where The Texas Company is building a refinery.

A. E. Humphreys of the Humphreys Corporation left Houston January 17 for Denver, going by airplane. The plane, a Fokker super universal monoplane, piloted by Eddie Brooks, took off from the Houston airport Thursday afternoon, and was scheduled to fly to Fort Worth Thursday, resuming the trip to Denver Friday morning.

Most of Pipe Strung For Texas West Texas Line

Houston.—Work is in progress all along the line which the Texas Pipe Line Company is building out of the Hendrick and Yates pools, West Texas, to Port Arthur; and pipe is strung nearly the full length of the line.

The centrifugal pump station at Crane, consisting of three pumps, is nearly completed; and a like station is being constructed at Sonora.

Work is also progressing on the other three stations along the line: at Iraan in the Yates field, at Junction, and on the Rosansky station, near Smithville. The Iraan, Junction and Rosansky stations are Diesel engine equipped. The equipment consists of McIntosh & Seymour engines direct connected with Gould pumps. Each of these three stations has four pumps.

This West Texas line of The Texas Company will have a total length of 560 miles, consisting of 12- and 10-inch pipe; and will have a daily capacity of 55,000 barrels.

Smith Brothers, Dallas, have the contract for construction of the line; and they have sublet the hauling contract to Dunn Brothers.

Freezing Weather Slows Work in Kansas

Tulsa.—Freezing weather greatly hampered drilling development in Kansas during the past week. There were no completions. Several showings of oil and gas were found in the upper formations by tests drilling to the lower formations. These showings are generally found in the tests of Sedgwick and Harvey Counties and little importance is attached to them.

Connell Oil Company's Cross 1, NE Section 27-25-1w, is drilling slightly below 3000 feet, just above the red rock. This important test is located northwest of the Valley Center field, and should be the next completion in that district. It is running approximately 65 feet lower than the discovery well, Wright 1, in Section 12-26-1w.

The most important feature of work in this area was probably the spudding of 22 tests, the majority being around the Valley Center townsite with the others semi-and rank wildcat tests. Wildcat tests are being started throughout northeastern Sedgwick and southeastern Harvey County as a result of the big production around Valley Center.

Empire Oil & Refining Company's Suderman 1, SEc NE Section 12-19-2e, Marion County, continues to fight a cavey hole. It looks good for several hundred barrels of oil daily at 2825½ feet which is thought to be the Wilcox sand. Another trend play is developing as a result. The new play is being made to the southwest of the Empire test. It is expected to run approximately 12 miles northwest of the trend from Valley Center.

Atlantic Increases Runs to 36,000 Barrels

Dallas, Texas. — Movement of West Texas crude to the Gulf Coast via the Atlantic Pipe Line Company's recently completed 10-inch trunk line, which extends from the Hendrick field, via tank farm at Midland to export terminals at Atreco, was increased to 36,000 barrels daily January 15, according to R. W. Howe, vice-president and general manager. Including the original 71-mile stub unit extending from the Hendrick field to Midland tank farm, this 10-inch system contains 580 miles of pipe, with 14 main line stations, and is rated above 40,000 barrels daily during the warm days. It was built to handle the oil produced and purchased by the Atlantic Oil Producing Company for delivery to the East Coast plants of the Atlantic Refining Company.

Although Atlantic Oil Producing Company controls potential production in the Hendrick field estimated at 313,291 barrels on January 15, the enforcement of proration restricts its production to 16,682 barrels daily, or less than one-half the capacity of the trunk line, during the current proration period. This situation has caused Atlantic Pipe Line Company to become actively engaged in soliciting oil for purchase in Winkler County in order to maintain normal pipe line runs without withdrawing from storage, and lately connections have been obtained from Skelly Oil Company and Southern Crude Oil Purchasing Company at the field posted price of 65 cents per barrel.

The first oil pumped through Atlantic Pipe Line Company's Midland-Atreco line arrived at the latter point 5 a. m. January 8, although the filling of the line with crude was started at Midland about December 19. All stations are equipped with electric driven centrifugal pumps.

A transportation charge of 40 cents per barrel applies on oil moved via the Atlantic Pipe Line Company's system from Winkler station to Atreco, with an additional tariff of 10 cents per barrel to cover gathering charges in the Winkler County area. The rate from the field, including gathering charges, to McCook, which is designated on the tariff instead of Midland, is 15 cents per barrel.

Producers' Mass Meeting Again Postponed

Tulsa.—Mass meetings of oil producers, scheduled for Independence, Kansas, January 25, and Tulsa, January 29, have been postponed a second time. The announcement today from J. C. Denton, president of the Oklahoma-Kansas Division of the Mid-Continent Oil and Gas Association, was to the effect that these meetings will not be held until after the meeting of the board of directors of the American Petroleum Institute in St. Louis, February 11. These meetings were called for the purpose of considering the bills prepared by a committee of the American Bar Association for submission to the legislatures of states having oil production.

Tulsa—Oil producers of both Kansas and Oklahoma will come together in mass meetings to consider the two conservation bills, prepared by a committee of the American Bar Association, for submission to legislatures of states having oil production.

The Kansas meeting will be held January 25, 2 o'clock, p.m., in the ball room of Memorial Hall, Independence, Kansas.

The Oklahoma meeting will be held January 29, 2 o'clock, p.m., in the assembly room of the Exchange National Bank Building, Tulsa.

Previously these meetings had been set for January 18 and January 22, respectively. The postponements were made in order to give more time for consideration of the proposed measures.

The bulletin from officials of the Mid-Continent Oil & Gas Association outlining these meetings reads in part as follows:

"Each corporation, partnership or unit owning oil production will be entitled to a delegate and a vote in the meeting. To secure orderly voting by bona fide producers and royalty owners, it is suggested that each corporation or unit furnish its delegate or representative with written credentials in the form of a letter to be filed with the secretary of the meeting. From these letters the roster of voting delegates will be made up and the meeting will then be properly organized for the transaction of business."

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Subsurface Correlation Methods In Permian Basin[1]

By LON D. CARTRIGHT, JR.[2]

LITTLE has been written of the methods of subsurface correlation employed by geologists in the West Texas Permian basin, although the province is notable for its present and potential oil production, and is most decidedly a region in which the geologist relies upon data of wells already drilled in order to locate new tests. Subsurface work is so widely pursued, and the importance of studying collections of formation samples taken at regular and close intervals is so generally recognized, that scarcely a wildcat well is now drilled without special instructions being given that samples be systematically saved. The collection of these samples has become a duty of company scouts or specially designated "sample grabbers" who do little else. In order that those of the oil industry in West Texas other than geologists may know why such importance is attached to samples, and that geologists in other districts may know something of subsurface methods used in West Texas, the following brief article is written. The writer is indebted to John Emery Adams of the California Company subsurface laboratory, with whom he was formerly associated, for suggestions and material.

The formations penetrated in drilling wells in the Permian basin are shown in the accompanying generalized stratigraphic table (Figure 1.) In the Cretaceous formations only are recognizable, diagnostic fossils commonly found. Since the Triassic, Cretaceous, and younger beds do not rest comfortably on the Permian, it was early recognized that determinations of subsurface structure should be based upon horizons within the Permian. The top of the "big lime" and the top of the Delaware Mountain formation, commonly referred to as the "Delaware sand," were selected as most satisfactory, both because they would best show the structure of the principal productive zones, and because they were most easily determined. The top of the salt beds was widely used at first for general upper hole correlation, but more extensive drilling has shown that it is dependable in local areas only. Other horizons have been found of local value, such as the Yates sand[3], the base of the salt, and the top of the Lower Castile.

The Delaware sand is encountered beneath the Lower Castile member of the evaporite (anhydrite and salt) and Redbeds series in the western part of the Permian basin, principally in Reeves and Loving Counties, and in parts of Eddy, Lea, Winkler, Pecos, Culberson, and Ward Counties, as the top of the Delaware sand is a readily recognizable horizon, it will not be discussed further. The "big lime" is not a recognizable part of the section in the region in which the Delaware sand is found, and its correlation with that section is a frequently debated subject among West Texas geologists.

The name "big lime" is applied to the dolomite or dolomitic limestone which is encountered below the evaporite and Redbed series in most of the basin. It seems probable that in parts of the basin an unconformity separates it from the overlying beds, but in other parts the evidence strongly opposes the presence of an unconformity. The exact stratigraphic position of the "big lime" in the geologic column is not settled yet, and there is evidence that its top is not of the same age throughout the basin. Megascopic and microscopic fossils are found in some cores from the "big lime" and in thin sections made from drill cuttings. They are commonly very poorly preserved, and where they are specifically determinable, type material is not available for comparison. In spite of the unsettled questions relating to the "big lime," the top of it is the point selected in wells in order to calculate structure.

The character of the top of the "big lime" is quite different in various parts of the basin, as is shown in Figure 2. In

AGE			THICKNESS IN FEET	DESCRIPTION
QUATERNARY & TERTIARY			0-500	SURFACE GRAVELS, SANDS, CLAYS AND CALICHE. THICKEST DEVELOPMENT IN REEVES COUNTY AND ON HIGH PLAINS.
CRETACEOUS			0-700+	LIMESTONE, WITH A BASAL SANDSTONE. A FEW SHALE BEDS IN BOTH. BEST DEVELOPED IN THE EDWARDS PLATEAU REGION WHERE IT CROPS OUT
TRIASSIC			0-1700	RED AND GRAY SHALE, RED AND GRAY SANDSTONE AND CONGLOMERATE EXPOSED IN A BELT ALONG THE EAST MARGIN OF THE BASIN, AND IN THE PECOS RIVER VALLEY. REPRESENTED IN THE UPPER PART OF THE HOLE OF WELLS IN MOST OF PERMIAN BASIN.
PERMIAN	EVAPORITE & RED BED SERIES		500-4000	PRINCIPALLY ANHYDRITE, SALT, RED SHALES, RED, GRAY AND BUFF SANDSTONES AND A LITTLE DOLOMITE AND GRAY SHALE. IN THE CASTILE BASIN A FORMATION FROM 1000-1500 FEET THICK OF SALT AND CALCITE-BANDED ANHYDRITE TENTATIVELY CALLED THE LOWER CASTILE, SEPARATES THE YOUNGER EVAPORITE AND RED BED SERIES FROM THE DELAWARE MOUNTAIN FORMATION.
	"BIG LIME"			DOLOMITE, WITH VARYING MINOR PROPORTIONS OF ANHYDRITE, RED AND GRAY SHALE, AND SANDSTONE, ESPECIALLY NEAR THE TOP.
		DELAWARE MOUNTAIN		FINE GRAY SANDSTONE WITH SOME BLACK SHALE AND A LITTLE LIMESTONE.

TABLE OF FORMATIONS OF THE WEST TEXAS PERMIAN BASIN

FIGURE 2

[1]Printed in The OIL WEEKLY by permission of the Bulletin of the American Association of Petroleum Geologists.

[2]Geologist Superior Oil Company of California, Carlsbad, New Mexico.

[3]Described by John Emery Adams and described and named by the writer and Mr. Adams. See G. C. Gester and H. J. Hawley, "The Yates Field, Pecos County, Texas," Structure of Typical American Oil Fields, Vol. II, Amer. Assn. of Petroleum Geologists (in preparation.)

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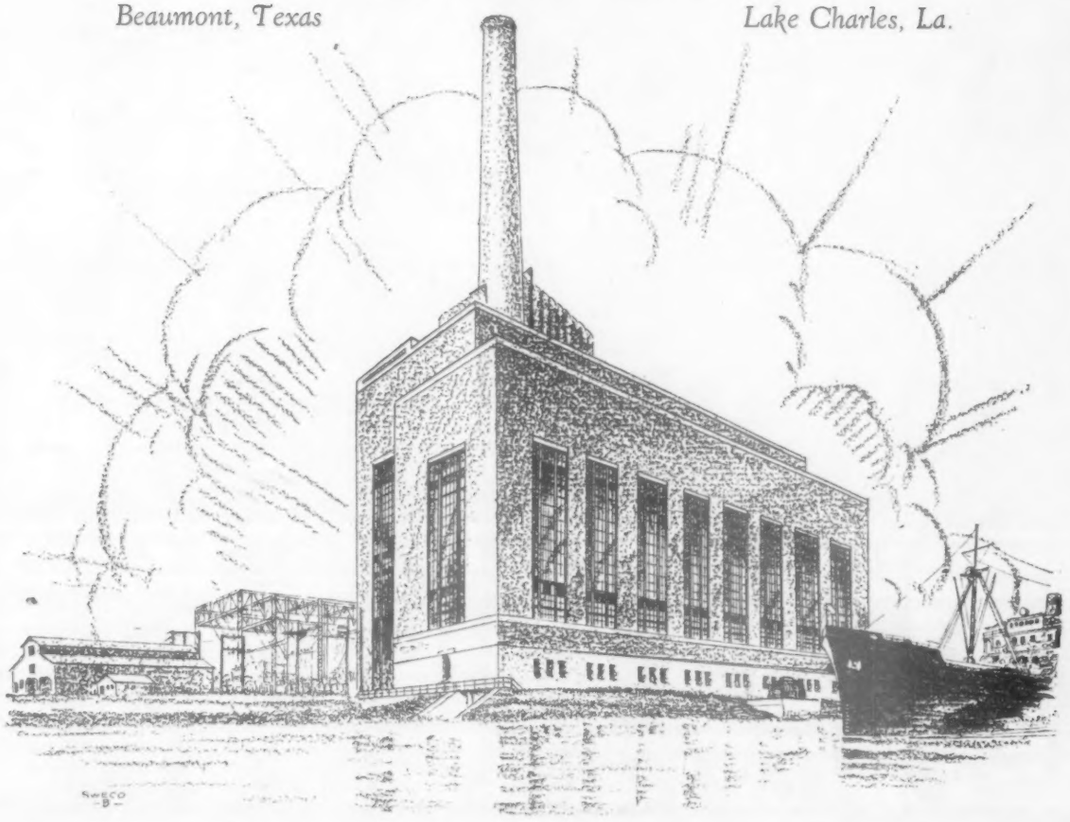

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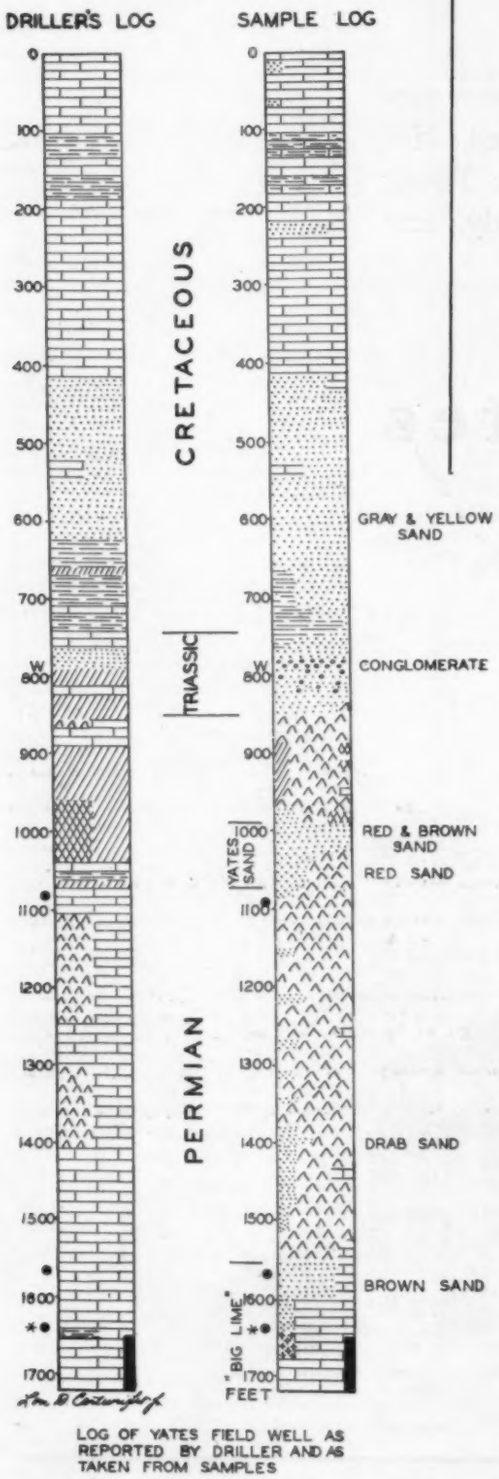
some places there is a gradation of hundreds of feet through which occur dolomite, anhydrite, red and non-red sandstone and shale; in other places the break is abrupt. It is because the top of the "big lime" is so poorly defined in many areas that very many of the "lime tops" first reported are later found to be erroneous. In working each part of the basin it is necessary first to determine what point in the stratigraphic column between the known "big lime" and the overlying beds is constant laterally in that area. This must be done by correlation,



LOG OF YATES FIELD WELL AS REPORTED BY DRILLER AND AS TAKEN FROM SAMPLES

FIGURE 3

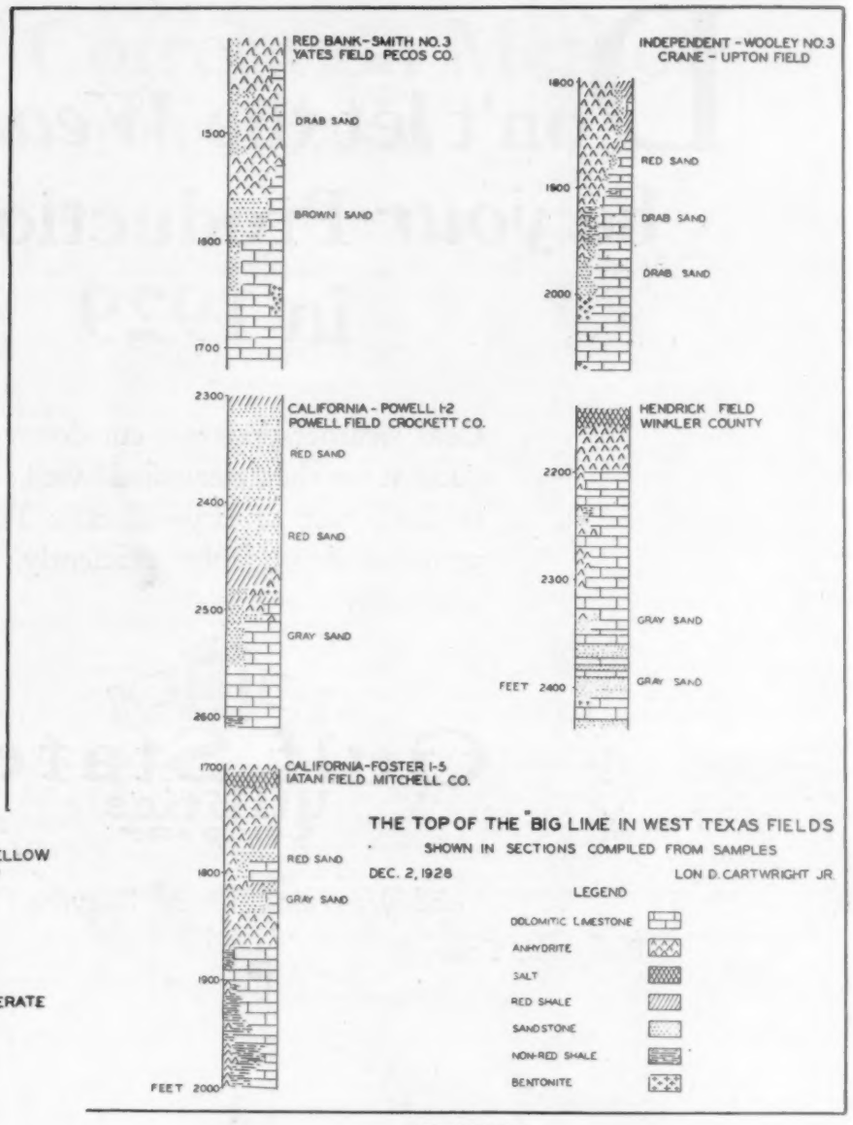


FIGURE 1

best accomplished with carefully prepared, percentage sample logs. In some areas this point is the first well-defined dolomite break; in others it is the base of the main anhydrite; and in still others it is a thin sandstone and dolomite zone overlying a bentonite. When this point has been determined, it is usually possible to recognize it in adjacent wells. As different geologists ordinarily choose different points, the data of one may run higher or lower than the data of another, although both will refer to their points as the top of the "big lime." In some areas, notably Lea County, New Mexico, it is essential that the geologist work out the history of deposition in determining the correlations he will adopt, and fit the lithologic sequence into the scheme of events.

It is in the attempt to define points at the top of the "big lime" that its upper part has been divided into members, based on color, the presence or absence of anhydrite, sandstone, or bentonite. This has led to the use of the terms "brown lime" (referring to a member that may possibly better be considered a part of the evaporite column), "gray lime," "white lime," "sandy lime," and "pure lime," depending upon the features to which the geologist assigns correlative value. Oolitic, lignitic, and cherty zones have been recognized as of local value, more as a check than as anything else. Oil-, gas,- and water-bearing zones are extensively used, although field wells close together show that these zones may vary in stratigraphic position.

When the nature of the contact of the "big lime" with the overlying beds is understood, it is apparent why samples are so necessary. The principal difficulties with using drillers' logs are: first, most drillers do not properly distinguish between the rocks they drill, especially between anhydrite, limestone, and dolomite; second, their logs are too generalized; and third, they may not record small proportions of some rock, the presence of which in the particular section may be critical. A comparison of a graphic log made from sample examination with a graphic log

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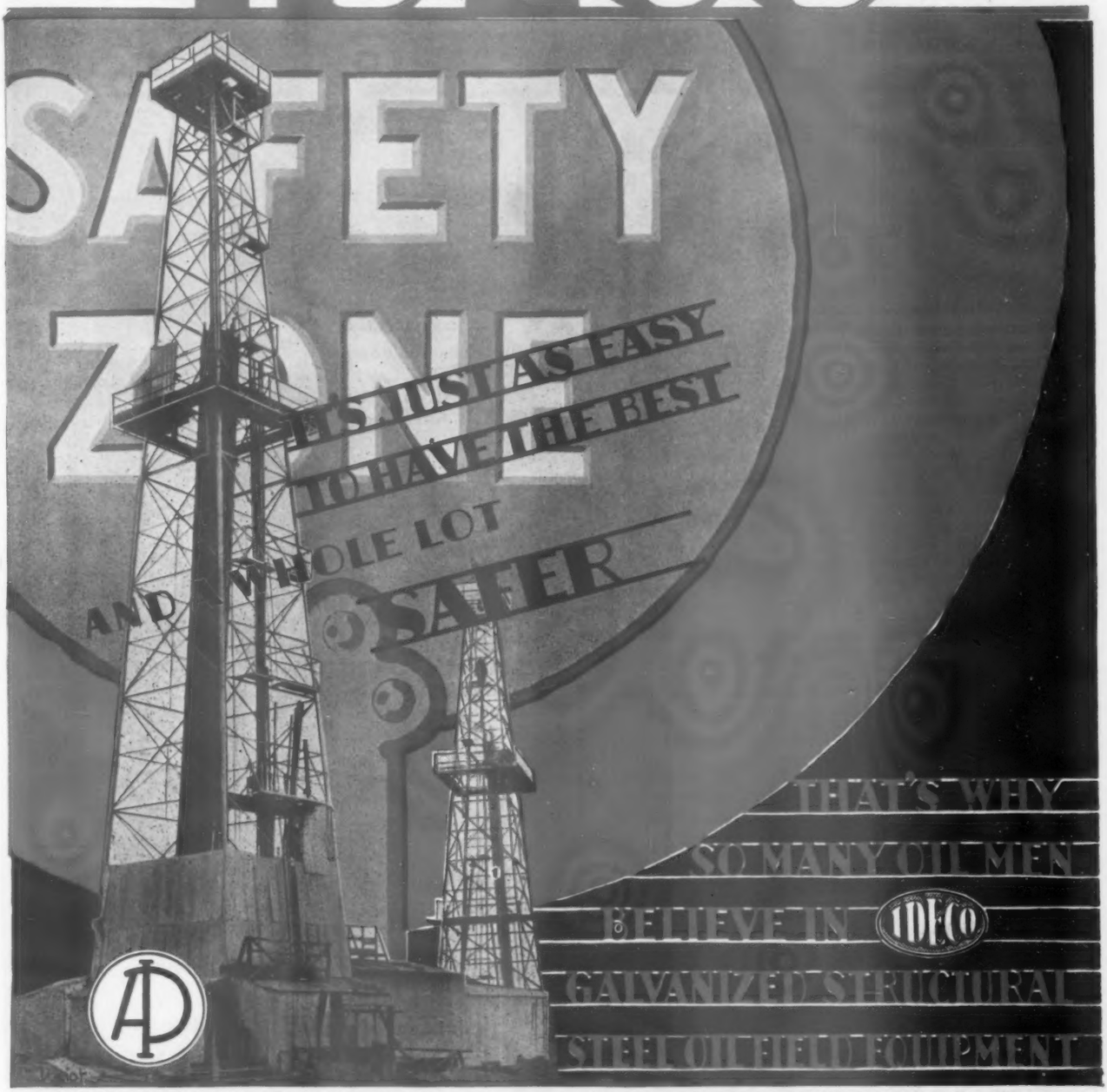

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prepared from the driller's log on the same well, (Figure 3, shows that the true idea of the formations penetrated is not afforded by the driller's log, and that the features upon which correlations might be based are very poorly shown, if at all. In the driller's log in this figure, it may be observed that the gravel at 800 feet is reported as limestone; the upper anhydrite which carries a little red shale, salt, and dolomite, is reported as being principally red shale and salt; and the sandstone at 1000 feet, which is a readily recognizable formation in the Yates field, is not reported at all. Most important, the driller's log does not correctly indicate the top of the "big lime," which may be picked from it 125 feet higher than it really is.

Many operators try to save samples at the top of the "big lime" only. In doing this they may take too few, thus failing to obtain the data necessary for picking the top accurately. Recent work in the Yates field has shown that it is possible to distinguish upper hole horizons when sufficient samples are available, and the evidence of these horizons may become of great importance, many times repaying the trivial cost of collecting them.

The writer believes that, although the subsurface stratigraphy of the West Texas Permian basin is a very complicated problem, if good samples are saved on sufficient wells, both field and wildcat, and if geologists co-operate properly in their study and interpretation, it will be possible eventually to solve the most of the intricate details now so puzzling.

West Texas Production

WINKLER COUNTY

	Producing Wells	Daily Average Prod.
Hendrick-Llano-O'Brien—		
Southern Crude-R .A. Westbrook-Dixie.	146	*39,405
Pure Oil Company	37	*20,070
Gulf Production Company	31	*16,495
Shell Pet. Corp. & The Texas Co.	44	*14,845
Atlantic Oil Producing Co.	32	*14,510
Shell Petroleum Corp.	37	*9,910
Skelly Oil Company	14	*9,885
Humble Oil & Refining Co.	36	*8,930
Prairie Oil & Gas Co.	10	*5,300
Atlantic & Collett-O'Keefe	12	*4,875
Republic Production Co.	16	*4,330
Murchison & Cranfill Bros. Oil Co.	8	4,015
Independent Oil & Gas Co.	18	*3,470
Texon Oil & Land Company	12	*1,970
Marland Production Co.	7	*1,860
The California Company	8	1,530
Clint W. Murchison & T. P. Lee	1	1,285
Cranfill & Reynolds, Inc.	8	*1,175
Amerada Petroleum Corp.	3	*1,045
Atlantic & Kessler-Logan	2	*915
Magnolia Petroleum Co.	8	910
Eastland Oil Company	3	680
Empire Gas & Fuel Company	1	*410
L. H. Wentz et al	1	530
El Paso (Bankers) Production Co.	1	165
Arizona Mining & Eng. Co.	1	150
Shell & Llano Oil Co.	2	125
Winkler Oil Producing Co.	1	120
May Production Company	1	35
Sid Richardson et al	1	320
Total	503	169,265

PECOS COUNTY

	Producing Wells	Daily Average Prod.
Yates Field—		
Mid-Kansas & Transcontinental Oil Co.	102	*35,310
Gulf Production Company	31	*9,850
Gulf Prod. Co. (Crockett County)	3	245
The California Company	41	*8,780
Simms Petroleum Company	7	*4,415
Shell Petroleum Corp.	25	*4,040
McMan O.&G. Co. & Marland Prod. Co.	17	*2,800
McMan Oil & Gas Co.	12	*2,705
Humble Oil & Ref. Co.	15	*1,825
Marland Production Co.	9	*1,165
A. L. Hawse et al (River Bed)	7	705
Red Bank Oil Company	5	*510
Matador Oil Company	2	*450
Madza Oil Co. & Savoy Oil Co.	3	*445
Cosby Drilling Co.	1	*370
Kirby Pet. Co. & Edson Pet. Co	1	205
Grayburg Oil Co. & T. T. Word	3	120
Pecos Valley Oil Co. (Wildcat)	1	100
Skelly Oil Company	1	100
Phillips Petroleum Company	1	80
Kirby Petroleum Co.	1	70
Dixie Oil Co. (Crockett County)	1	15
Total	289	74,305

REAGAN COUNTY

	Producing Wells	Daily Average Prod.
Big Lake Field—		
Big Lake Oil Company	155	14,040
Texon Oil & Land Company	79	4,730
Skelly Oil Co. & Utah Southern	2	....
The California Company	1	10
Total	237	18,780

CRANE COUNTY*

	Producing Wells	Daily Average Prod.
Church & Fields—		
The Texas Company	18	6,770
Simms Oil Co. & Atlantic Oil Prod. Co.	32	3,830
Tidal Oil Co. & Turman-Maxwell	26	3,705
Prairie Oil & Gas Company	13	2,880
Warner-Quinlan Co. of Texas	27	2,620
Humble Oil & Refining Co.	14	2,240
Magnolia Petroleum Co.	33	1,555
Gulf Production Co.	11	1,115
Independent Oil & Gas Co.	7	920
Church-Fields et al	4	375
T. P. Coal & Oil Co.	1	55
Stidham & Thrasher	1	10
Total	187	26,075
Gulf-McElroy	68	12,885
Gulf-Waddell	2	20
Miscellaneous	27	615
Total for Crane County	284	39,595

MISCELLANEOUS

Howard County	254	40,245
Upton County	252	9,815
Jones County	61	7,125
Mitchel County	142	2,855
Crockett County	40	2,130
Fisher County	8	875
Loving County	8	400
Runnels County	3	165
Ward County	1	95
Scurry County	5	35
Ector County	1	5
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Total for all fields	2088	365,690

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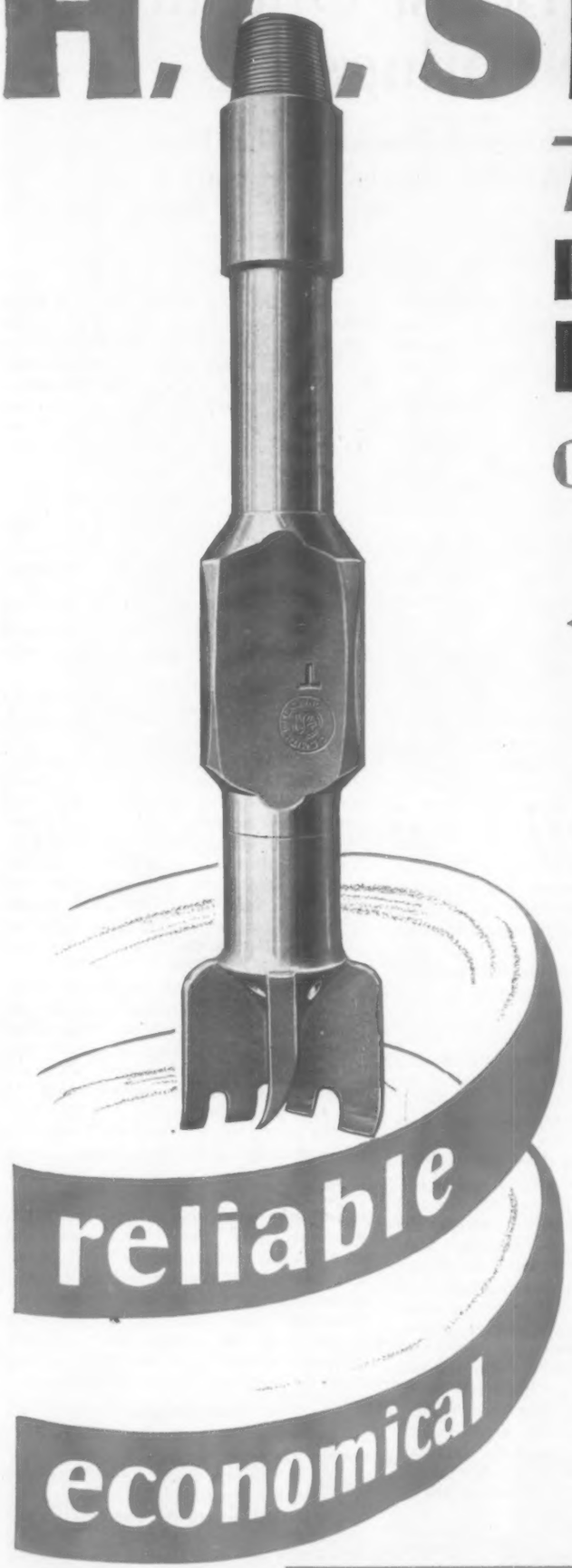

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Big Wells Again Boost Output at Santa Fe Springs

Operators again turn to Buckbee with better showing in that formation; estimates now place output at 200,000 barrels by February 1

By BRAD MILLS
Staff Representative

LOS ANGELES—A flock of new completions released a veritable flood of crude in the Santa Fe Springs field during the week and sent production soaring to new heights for the sixth consecutive week. Among the new wells was a 9000-barrel completion and several lesser lights which brought the average initial production to about 3700 barrels. Actual production climbed to 170,000 barrels at the end of the week, but the average for the period was considerably under this figure.

An analysis of recent developments shows that the Buckbee sand is a much better formation that it seemed to be a month ago, and that peak production may be higher and the decline slower than optimistic reports of a month ago indicated. Water is causing some trouble in the western part of the field, but wet wells are the exception rather than the rule near the center and along the east side of the structure.

Encouraged by the better turn in the Buckbee zone, operators are inclined to reverse their tactics by shifting from the Intermediate sand to the Buckbee. A few weeks ago two of the major operators announced their intention to test the Intermediate zone first. During the past two weeks, Buckbee zone completions have been satisfactory from almost every standpoint and indications are that the deeper sand will again become the chief objective. The Intermediate zone apparently is confined to the top of the structure and the more recent completions have carried more water than those effected in the Buckbee. Its thickness is conducive to longevity, but its small area and tendency to go rapidly to water near its edge are offsetting factors. The formation has been fairly well defined on all sides, showing it to be much smaller in lateral area than the Buckbee sand. The discovery well of the Intermediate zone has proved to be the most consistent producer in the field, but it is so near the center of the structure that its phenomenal performance may easily be accounted for. In a few of the recent Intermediate zone completions, it has been necessary to plug back a short distance to evade bottom water. This condition exists only near the maximum producing limits of the sand, however.

200,000 February 1

Production of 200,000 barrels by February 1 seems likely, with the peak to follow a little later. Just as it has been difficult to predict peaks and their exact time in other Los Angeles Basin fields, so it is in the re-development of the Santa Fe Springs field. Economical conditions in the industry demand that constant forecasts be made, but they are more often than not mere guess work. The peak should not pass 250,000 barrels, with 225,000 barrels the most logical figure, but new developments from week to week change the situation.

The east side of the field has been chiefly responsible for the marked improvement in the Buckbee zone. As stated several times before in these columns, this part of the field has been making a much better showing than the west side, and developments during the past week added new laurels to this sector. The best well completed in either zone—a 9000-barrel producer—sent the center of production much farther east and definitely proves that the accumulation of oil does not strictly conform either to surface indications or to the development of the Meyer zone. It has been found that there is more Buckbee sand and shale on the east flank than on the opposite side. This is regarded as a favorable omen. The sand is also coarser and approaches saturation equally as well in other sectors. The interval between the Meyer and Buckbee zones is less than along the west side, making it possible for the two zones to have a more direct relation.

The west side of the field failed to show any improvement during the week. General Petroleum Corporation has shut down Jalk 112, 113 and 114, pending the outcome of neighboring wells. The Texas Company will stop Matern 3-10 and Matern 3-14 in the Meyer zone, provided something unexpected does not develop. Barnhart and Morrow are inclined to follow the lead of The Texas Company and probably will test at least one well in the Meyer zone. The Texas Company's Matern 3-11 failed to flow after three days of swabbing and presents a problem. Bottom water has been found in several western wells, along the same contour lines as have marked good producers on the opposite side of the structure. Whether this unsatisfactory condition will prevail northwest and southwest of the present trouble remains to be seen. Wells directly north of these unsuccessful tests have produced fairly satisfactorily, but as the axis of the structure assumes a northwest-southeast trend, they would be nearer the main line of production than the western and southwestern wells.

Stated briefly, the Buckbee zone looks much better as a whole and may make the showing expected of it when it was discovered. It is not more than 200 feet thick, but is very much alive, nevertheless. Water has made no new inroads in the strictly "dry" part of the field and more than a dozen clean wells during the past two weeks has lifted the formation out of the doubtful class.

North Edge Test

Final test of the Associated Oil Company's Dalugge 7, the most northerly drilling well, is attracting much attention. About 30 feet of oil sand was cut and a successful well in this part of the field would make the interval between the good wells on the south and the northern edge very attractive.

No change in the status of the extreme northwest part of the field was noted. Associated Oil Company's Clark 2 has passed 7000 feet and is now considered too deep for a test in this part of the field. It is by far the deepest well ever drilled in or near the field and was closely watched between 6000 and 7000 feet. An oil sand at this point probably would have meant a highly saturated formation nearer the apex of the structure. Richfield Oil Company is drilling at 6700 feet in Elliott 2, with the formation running to gray sand.

Two deep tests which are already drilling far below the Buckbee zone in the proven part of the field are expected to reveal the possibilities of the lower formations—possibly the Miocene. They are General Petroleum Corporation's Jalk 111 and George F. Getty's No. 19. The former is coring at 6215 feet, while the latter passed 6000 feet. There is no known reason why the Miocene should not be productive in the Santa Fe Springs field, just as it has proven so at Long Beach. On the other hand, there is absolutely no proof that it will produce a barrel of oil. The discovery of another deep sand would undoubtedly upset the crude market in California, provided no conservation means could be found. Many of the wells now producing in the Buckbee zone could be deepened on short notice.

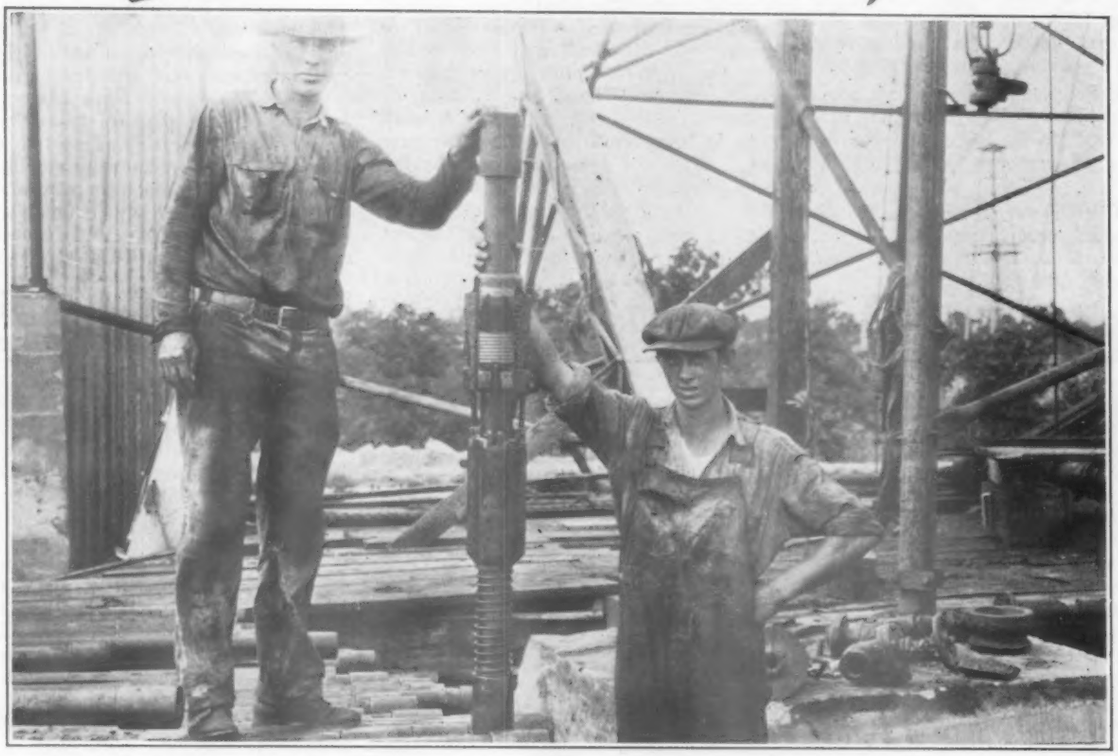
Completions

Completions at Santa Fe Springs during the week were:

General Petroleum Corporation No. 225; initial production, 9000 barrels; total depth, 5805 feet; gravity, 35; cut, 0.2 per cent. (Buckbee zone.)

General Petroleum Corporation, S. F. S. 160-A; initial production, 2500 barrels;

In oil field lingo:



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total depth, 5015 feet; gravity, 33.4; cut, 5.1 per cent. (Intermediate zone.)

General Petroleum Corporation, Anderson 153-C; initial production, 3800 barrels; total depth, 5336 feet; gravity, 34.3; cut, 0.1 per cent. (Intermediate zone.)

General Petroleum Corporation, Santa Fe Springs 190-C; initial production, 2000 barrels; total depth, 5728 feet; gravity, 35; cut, 0.2 per cent. (Buckbee zone.)

General Petroleum Corporation, Santa Fe Comm. 186-E; initial production, 3100 barrels; total depth, 5025 feet; gravity, 32.0; cut, 18 per cent. (Intermediate zone.)

General Petroleum Corporation, S. F. S. 161-A; initial production, 3600 barrels; total depth, 5742 feet; gravity, 35; cut, 0.4 per cent. (Buckbee zone.)

General Petroleum Corporation, S. F. S. 227; initial production, 5000 barrels; total depth, 5679 feet; gravity, 34.9; cut, 1 per cent. (Buckbee zone.)

Graham & Loftus, Santa Fe 2; initial production, 3000 barrels; total depth, 5285 feet; gravity, 35.1; cut, 0.6 per cent. (Intermediate zone.)

Shell Company, G. H. N. 19; initial production, 1500 barrels; total depth, 5815 feet; gravity, 38.4; cut, 10 per cent. (Buckbee zone.)

Standard Oil Company, Walker 12; initial production, 3700 barrels; total depth, 5747 feet; gravity, 35.6; cut, 0.1 per cent. (Buckbee zone.)

General Petroleum Corporation's completions during the week brought that company's total production up to 43,000 barrels daily from the deep zones. The company's No. 225 is the largest well yet completed in the deep sands and is located far east of the inside contour lines.

A survey shows five wells coring in, three cemented over and three ready to test in the Intermediate zone, with 20 coring in, 22 cemented over and 12 ready to complete in the Buckbee zone. Drilling wells total 220, with several active locations. Production from the deep zone has reached 150,000 barrels, with the shallow zones accounting for the remainder.

Report of Shallow Strike at Potrero Premature

Los Angeles—Excitement following the false report that Jim Pollard had encountered oil sand at 3200 feet in his wildcat test near Potrero field has subsided. An actual examination revealed that the formation was nothing more than gray sand. This well is located in the city of Inglewood and is drilling on the theory that the Potrero field extends in this direction.

Associated Oil Company has passed 200 feet in Potrero 1, its first test on the Potrero Country club lease. Completion of Cypress 3 indicated a trend toward this lease, but only further drilling will disclose the possibilities of the vast tract. The company's Pacific-Southwest 1 has been tested around 5000 feet but failed to make a commercial producer. The well was originally drilled to 5916 feet, and plugged back for a test of the sands logged at higher levels.

Well a Month Schedule of Development at Elwood

Santa Barbara, Cal.—Continuing their success in the new Elwood field, Rio Grande Oil Company and Barnsdall Oil Company have completed Doty 2 with an initial production of 4200 barrels of 38 gravity oil. The well was completed at 3490 feet, or considerably deeper than the discovery well. The oil showed a cut of only two-tenths of one per cent. A small bean is being used as a safety measure only, officials of the companies having stated that the well probably would produce more than 6000 barrels if allowed to flow at a maximum rate. About 175 feet of oil sand was included below the final water shut-off at 3300 feet. Completion of Doty 2 brings field production to 18,000 barrels from only five wells. The average initial production has been about 4000 barrels, with no trace of water in any well.

Development of the Elwood field has been orderly, with an average of less than one well per month. Several wells are testing the flanks of the structure, but developments show that the field will be a small one. Already three wells have passed the level at which the oil sand was expected, but only an occasional oil or gas showing was encountered.

A pipe line for loading ocean tankers has been finished, while shipments by rail could be arranged if necessary. The loading arrangement is unique. The oil flows into large tanks located far above the ocean. The oil flows by gravity from these storage tanks to the ocean liners.

Kern Front Drilling Held to Line Wells

Bakersfield, Cal.—Completion of two wells in the Kern Front field during the week gave this heavy oil producing area the appearance of a much busier district than it really is. Pursuing the policy established several months ago, when the field was partially opened up after a shut-in of about six months, major operators are producing and drilling only line wells. The majority of the producing wells are line wells, however, because the field was developed by drilling offsets wherever possible. The wells completed were Associated Oil Company's No. 54, which was a 300-barrel producer at 2240 feet, and Chanslor-Canfield Midway Oil Company's No. 11, which came in with an initial production of 175 barrels from 2310 feet.

New Locations Made at Kettleman Hills District

Coalinga, Cal.—New locations are appearing weekly in the Kettleman Hills district, with the major companies preparing to drill several wells over a wide area. Standard Oil Company has reached 1400 feet in No. 81, in Section 11-22-17, and is rigging up No. 8, on Section 1. This company controls a large block of acreage across the structure. Milham Exploration Company has started a well on Section 34-21-17, the second spudded since the company discovered the field several months ago. Elliott 1, the discovery well, is flowing about 3800 barrels of 60 gravity oil and 50 million cubic feet of gas. General Petroleum Corporation should be the next to reach the producing formation, Oschner 2 having passed 6550 feet. This well was started several years ago but remained shut down until the first producing well was completed recently. Marland Oil Company owns a large acreage only a short distance from the discovery well and is rigging up two wells. The Petroleum Securities Company is preparing for its development campaign by drilling a water well and building a network of roads. More than a dozen wells will be drilling within 30 days.

Hawthorne - Lawndale Area Has Lease Boom

Los Angeles—While slightly dwarfed by activity in the Santa Fe Springs field, the Hawthorne-Lawndale district is the nearest thing to a townlot drilling campaign since the feverish development of the Seal Beach-Alamitos Heights two years ago. Changing almost overnight from a one-well field to a milling throng of land agents and real estate promoters, the area promises to show more action during the year than any of the undeveloped districts in the Los Angeles Basin. The final spark which set off the leasing activity was the actual recognition of the field by three of the major companies. They bid for leases against the smaller companies, with the result that a real boom was made. More than a dozen derricks have been completed and an additional dozen locations made. The lessors seemed determined to drive a drilling clause in their leases and in their eagerness to get the acreage, such a provision generally was conceded. A large part of the leasing occurred in the townlot section and a corresponding amount of drilling will take place there. Geologists believe that the new field has an excellent chance of becoming a major producing district before the end of the year. Its proximity to Torrance is not an encouraging factor, but the water trouble in the older area may not extend to Lawndale.

Los Angeles Basin Wildcat Situation Unchanged

Los Angeles—Active wildcat wells of the Los Angeles basin showed little change during the week. Associated Oil Company reached 5875 feet in Taylor 1, a test at Downey and near the Santa Fe Springs field, but the formation continued to run to a hard gray sand. The Texas Company is drilling past 3300 feet in Crawford 1, a test in the little-explored Garden Grove district, but does not expect to find anything of importance above 4000 feet. Western Drilling and Producing Company has a fishing job in Pacific Ranch 1, located about midway between the Huntington Beach and Newport Beach fields. The company has started another wildcat only a short distance from the original test.

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Test Shows Possible Extension Of Champagnolle South

Nothing shown by two deep tests drilling northeast and west of production; completions in Shreveport area add little during week

SHREVEPORT, Louisiana.—With no tangible results so far obtained in two deep tests on the northeast and west sides of the Champagnolle oil field in Union County, Arkansas, interest in that district during the week shifted to a possible extension of a quarter of a mile south as the result of a drill stem test of O. W. Estes and others' in W. K. Gregory 1 in SE of SW, Section 15-17-14, which showed ten million cubic feet of gas and a spray of oil at 2852 feet where 6⅝-inch casing is now being set.

Meanwhile Lion Oil and Refining Company is drilling ahead in Union Sawmill Company 5, Section 7-17-13 in the northeast extension of the field which at one time gave rise to hopes that a new and deeper producing horizon had been uncovered. During the last week the well cored a salt water sand at 3860 feet and is now drilling at 3865 feet.

The deep test on the western side of Champagnolle is Oil Well Corporation's Kelly A-2 in 9-17-14 also was promising a fortnight ago but which during the last week tested ten fourbles of salt water from 3390 to 3397 feet. Bottom of the hole is now being cemented.

While Champagnolle continued to hold the major interest in the tri-state territory of North Louisiana, South Arkansas, and East Texas, there were several developments in other fields of more than passing interest.

The Lake Bisteneau district of Bienville Parish where a salt dome structure was discovered several years ago and where intermittent drilling has gone forward since, with varied shows of gas, added a one million foot gas well during the week in W. P. Wallace's Ashley 1, Section 15-16-10, at 2005 feet. This well is approximately six miles east of gas production in the Elm Grove area of Bossier Parish. The well is shut in waiting orders.

Another development of more than passing interest was the unconfirmed report that Smitherman and McDonald cored two feet of rich oil sand in Miller 1, Section 17-23-8, Claiborne Parish, a deep test in the old Haynesville oil field.

Last authentic reports from the test were that the well was shut down at 4243 feet waiting orders. The sand which showed the oil is reported to have been encountered in coring from that depth.

Another interesting development in connection with the test is the fact that Gulf Refining Company has acquired a half interest in the well and all of the surrounding acreage blocked by Smitherman and McDonald for the deep test. The price paid was not disclosed.

Possibility that the chalk rock formation of the Bethany gas field of Panola County, East Texas, may have gas production will be tested in Eureka Natural Gas Company's Gulley 2 in the B. C. Jordan survey where a test in this horizon will be made at a depth of 1500 feet. Eureka Natural Gas Company which recently acquired the holdings of E. R. Ratcliff consisting of approximately 6000 acres in the Waskom gas field of Harrison County and Caddo Parish, Louisiana, and in the Bethany field, including 10 producing gas wells, announced through A. E. Stilger, president, during the week that one million dollars will be spent in development of its holdings. This expenditure, according to Mr. Stilger, who is former president of the Chelsea Exchange Bank of New York City, will be spent not only in drilling to the horizons already yielding gas but also in deep tests and in testing chalk rock possibilities in the two fields. Mr. Ratcliff is also interested in the company. He is former president of the Louisiana Oil Refining Corporation.

Initial production in the Shreveport area was at a low ebb during the week. Only one producer was added, Magnolia Petroleum Company's Scroggins 1 in Section 1-22-11, Webster Parish, on the south side of the old Sarepta gas field where there has been a slight flurry of drilling activity following completion of several oil wells. The Scroggins well is pumping 158 barrels oil and 18 barrels of salt water daily from total depth of 2709 feet.

No Oil Wells at Champagnolle

Champagnolle did not record a producer during the week but added three gas wells, one of which will be deepened. Rovenger Oil Company obtained the best of the trio of gassers, its W. H. Perdue 1, Section 9-17-14 gauging 43 million feet at 2805 feet. The sand was tapped at 2773 feet. Alson Brothers also obtained a large gasser in Kelly 1 in Section 9-17-14 at 2806 feet. The yield is estimated at 35 million feet daily. Marine Oil Company's J. F. Sample 2, Section 7-17-13, came in making 15 million cubic feet of gas at 3045 feet along with a spray of oil. This well will be deepened.

Pure Oil Company went to 3260 feet in M. H. Nash 1, Section 7-17-13, before abandoning as a dry hole.

Three failures were chalked up against the North Louisiana area during the week. Dixie Oil Company abandoned Robertshaw 53, Section 13-21-15, Caddo Parish, Pine Island district, at 3757 feet in lime. It tested salt water. In the northern part of Bienville Parish, some distance from the small gasser in the Lake Bisteneau area, W. G. Gray, Trustee, tested dry and abandoned Johnson 1, Section 21-18-6, at 2930 feet. In the Urania district of LaSalle Parish M. H. King junked and abandoned M. H. King 1, Section 13-10-1e, at 1520 feet.

New drilling showed some recession from the level of the preceding week. Locations were announced for 11 new wells, four in Arkansas and seven in North Louisiana.

Magnolia Petroleum Company announced two offsets to the Scroggins well in Webster Parish, B. M. Cook 1 in Section 2-22-11 and Sallie Coyle 1 in the same section. The same company also made location for Marshall 6 in Section 21-21-10 in the Cotton Valley district of the same parish.

DeSoto Parish was the scene of two new locations. P. J. Becker announced location for Tull 1 in Section 23-12-15, Longansport district, where intermittent drilling with various shows of oil and gas has gone on in recent years. Magnolia Petroleum Company also announced location in the old Naborton oil field of the same parish for Clements 1, Section 28-12-11. Two new locations were announced during the week for the Little Creek extension of the Urania oil field in LaSalle Parish. H. L. Hunt, Inc., has already spudded in Urania 5 in Section 2-9-1e, and Montague Oil Company has made location for Zenoria Lumber Company 7 in 11-9-1e.

Of the four Arkansas locations, two were wildcats and two were for the Champagnolle field. O. W. Estes is drilling Rowland 6 in Section 14-17-14 and H. L. Hunt has made location for Gregory 4 in Section 10-17-14.

Ohio Oil Company has derrick pattern for Jerome Lumber Company 1 in SE NE Section 13-15-4, Drew County, a rank wildcat area. Charles McDonald is building derrick for Wilson 1 in Section 25-15-18, Ouachita County, offsetting McDonald Brothers' Wilson 1 in the same section. The new test is in SW NW of the section.

Wilson Brothers in Wilson 1, the second hole drilled for this test, which is between production in the Louann part of the Smackover field and the Stephens oil field, are still encountering trouble in the second hole. Operators are still fishing for 17 joints of drill stem, the hole now having a depth of 2806 feet. The status of Joe Hurley's Arkansas Land and Timber 1 in Section 29-16-12, Calhoun County, remains unchanged, a test of the

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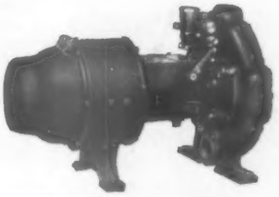

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hole at 2314 feet still being held up while titles are being perfected.

C. E. Harris and associates who have been shut down for a long time at 151 feet in Holmes 1 in Section 9-16-7, Ashley County, Arkansas, have abandoned the hole. Ohio Oil Company's Southern Lumber 2 in Section 19-16-9, Bradley County, has now attained a depth of 2620 feet and is being watched with interest by the scouts. H. H. Given has gone back into Garrett 1 in Section 1-13-19w, Garland County, and is fishing with cable tools at 2800 feet.

Among the Louisiana wildcats that are at an interesting stage is Palmer Corporation's Mitchiner 1 in Section 8-19-11e, East Carroll Parish, in which six-inch casing is set at 2401 feet on top of gas rock. Palmer Corporation owns a large tract in East Carroll, a wildcat area in the northeast part of the state, after completing a 40 million foot gasser several months ago, has drilled several failures in an effort to bring in another gasser, but so far without success.

Smitherman and McDonald's Miller 1 in Claiborne Parish is not the only deep test that is at the interesting stage in that parish. Dixie Oil Company is reaming to bottom at 4719 feet in Gilbert 1 in Section 27-21-5w.

In Sabine Parish, R. L. Gay, Trustee, who recently completed a 50-barrel flowing well, 19 miles from nearest production, is near the testing stage in his first offset, having attained a depth of 2003 feet in Sabine Lumber Company 1 in 13-7-14. He has also spudded in a second offset in Bowman-Hicks 2 in Section 14-7-14.

Puente

Los Angeles—Discovery of 150 feet of good oil sand in Richfield Oil Company's Didier 1, a wildcat near Puente, was one of the most important developments of the week in the Los Angeles Basin. Located in a district which had been shunned by many major companies, the well promises to make a commercial producer. The sand does not compare with that found in the larger fields of the basin, but it undoubtedly carries oil. The well was drilled to 3435 feet, with the 13⅜-inch casing cemented at 3250 feet for the production test.

Huntington Beach

Los Angeles—Petitions filed with the city council at Huntington Beach showed that a majority of the inhabitants favor deep drilling within the city limits. Deep tests have been rumored for the Huntington Beach field, but the matter of restrictions has been widely discussed. The city was thrown wide open to drilling during the early development of the field and it seems that the stimulation of business depends upon further drilling, according to the majority of the inhabitants.

Long Beach Production Increased

Los Angeles — Production at Long Beach increased almost 2000 barrels during the week, due to the completion of four good wells. After dropping to 129,500 barrels three weeks ago, deep sand production has staged a gradual come-back, now standing at 136,500 barrels. Present completions are not showing the snap which was characteristic of the earlier wells, but the field decline is slower than during the same period. This makes it easier to maintain the production from week to week than when new wells were coming in at a high rate and declining accordingly. The best wells completed last week were Sovereign Oil Company's No. 2, a 3100-barrel completion at 7811 feet; George F. Getty's No. 26, which came in with an initial production of 1600 barrels; Petroleum Company's Ifland 1, an 1800-barrel producer from 6786 feet, and Dabney-Johnston Oil Corporation's No. 17, which flowed 1000 barrels during the original test. Sovereign Oil Company's No. 1 is an unusually deep producer and showed a cut of 23 per cent.

Seal Beach Test Takes in 450 Feet Sand

Los Angeles—Completion by the Marland Oil Company of Bixby 15 as a 3200-barrel well again throws the spotlight on the deep sand at Seal Beach. The well was drilled to 5440 feet and was unusual in that the shut-off was effected at 4865 feet. This gave the well more than 450 feet of oil sand, which included a part of the Bixby zone, in addition to the Wasem sand. The oil was 27 gravity and clean. The initial production was 2000 barrels, but the flow increased to 3225 barrels after three days. The well is located in the main part of the field and gives the deep sand a better appearance in this sector than in the townlot area.

Well in Pueblo County Holds Colorado Interest

Denver, Colo.—There was no change in the status of Shaw 1, in Pueblo County, Section 3-22-63, drilled by the Rozella Oil Company, but it continues to be the center of all interst in Colorado. The oil shows a gravity of 33.8 degrees with a gasoline content of 34 per cent. and a paraffin content of 16 per cent. The well is about 40 miles east of the Florence field, in Fremont County, which is the second oldest oil field in the United States.

The well is the scene of all sorts of gatherings of curious folk; oil scouts from most of the major operators in the Rocky Mountain area have visited the well, and there have also been some scouts from the Mid-Continent and Texas. However, the more important companies seem inclined to wait for further developments and allow the territory adjacent to the discovery pass into the hands of smaller operators.

Rosella Oil Company's drillers have been most accommodating with their information, and patiently run the bailer time after time for any representative of an accredited company. The company will run a string of casing into the well, install a pump, and a boiler to replace the old tractor used in drilling the hole, and make a test as soon as possible. Regardless of the outcome, this well has proved the existence of an oil sand and several wells will be drilled by independent operators in the area at once.

Continental Men Hold Conference in Houston

Houston.—A district meeting held by members of the Continental Supply Company sales force at the Houston office of the company January 12 for the purpose of familiarizing the company's salesmen with machinery of the Emsco Derrick & Equipment was attended by 16 members of the Continental Supply Company force and six members of Emsco Derrick & Equipment Company. This meeting, called by Ed. J. Drake, district manager for Continental Supply Company, followed the acquisition of sales rights of all equipment manufactured by the Emsco Derrick & Equipment except steel derricks.

Emsco equipment was the topic of talks from L. R. McCollum, district division manager, Dallas, W. G. Fitzpatrick, district manager, and George W. Walton, district manager, Tulsa, for Emsco Derrick & Equipment Company.

The following Continental Supply Company men were present:

E. J. Drake, district manager, Houston;

G. S. Richmond, assistant district manager, Houston;

A. J. Olson, manager machinery department, Tulsa;

J. O. Mayfield, local manager, Houston;

W. F. Hanson, manager, Beaumont;

H. H. Brown, manager, Hebbronville, Texas;

D. G. Jones, manager, Mirando City, Texas;

G. A. Robinson, manager, Mexia, Texas;

W. B. Stallings, manager, Luling, Texas;

W. D. Williams, salesman, Mexia, Texas;

W. I. West, salesman, Houston;

Bryan Ward, salesman, Houston;

G. C. Parmalee, salesman, Houston;

R. L. Collier, Houston;

H. O. Trego, Houston;

F. E. Sickert, Luling, Texas.

Emsco Derrick & Equipment Company men attending the meeting were:

L. R. McCollum, district division manager, Dallas;

Mr. W. G. Fitzpatrick, district manager, Houston;

Mr. George W. Walton, district manager, Tulsa;

Mr. Albert Chapman, field engineer, Los Angeles;

Mr. Polk Reed, erection engineer, Houston;

Mr. Paul Kelting, salesman, Houston.

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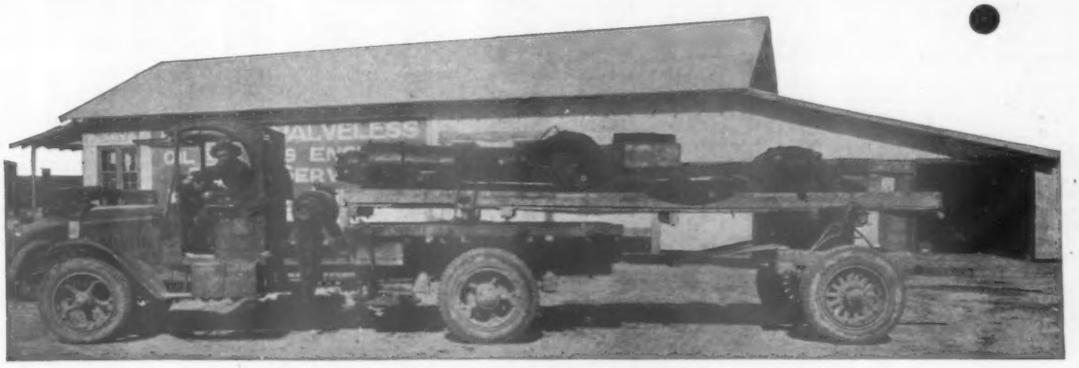

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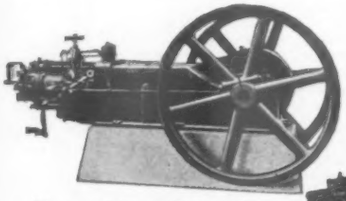

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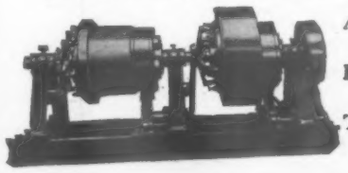
Type AO Oil Pumping Engine

Two speeds in either forward or reverse—all bearings enclosed —run in oil or grease.

All brake band and clutch discs adjusted without stopping the engine.

All brackets, bell cranks, toggle arms, brake cranks, levers, driving discs, spiders and sliding sleeves made of steel.



All similar parts of clutch interchangeable.

Belt driven — no shaft breakage.

The 2 SD Clutch will pull the largest bailer wthout faltering.

Type BG for Cable Tool Drilling, etc.

Here is a clutch that will operate satisfactorily and smoothly for cable tool drilling or for pumping operations. The BG type has one speed forward and reverse. It is much the same construction as the 2 SD clutch.

FRANKLIN VALVELESS ENGINE COMPANY
Franklin, Penna.

Distributed by

OIL WELL SUPPLY COMPANY

Branches in All Oil Fields

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1927	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
September	797,450	105,200	493,750	142,900	53,450	101,350	110,800	74,500	637,250	2,516,650	75,498,900
October	782,300	105,100	497,900	138,400	51,300	100,450	113,600	73,250	629,000	2,491,300	77,230,000
November	766,900	106,650	501,750	138,100	49,400	97,850	114,900	75,050	623,850	2,474,450	74,233,500
December	720,700	106,150	531,650	138,500	47,200	94,950	111,250	77,150	624,600	2,452,150	76,017,050
1928											
January	675,450	108,300	523,300	125,450	45,250	90,050	109,600	77,000	617,100	2,371,500	73,516,500
February	664,450	110,550	538,750	115,800	45,300	88,250	104,850	75,550	614,750	2,358,250	68,388,850
March	646,850	112,250	575,850	119,900	44,400	85,600	102,150	78,700	617,450	2,383,150	73,877,650
April	620,450	112,150	617,850	118,850	46,900	83,450	107,000	78,500	613,550	2,398,700	71,961,100
May	610,100	108,750	561,450	129,850	43,600	91,250	112,100	82,200	630,900	2,370,200	73,476,300
June	594,850	105,200	554,400	135,400	42,350	102,850	109,300	82,400	643,400	2,370,150	71,104,500
July	587,150	102,750	597,250	133,650	42,150	90,700	113,400	80,400	644,700	2,392,150	74,156,600
August	656,350	102,200	604,000	130,200	40,200	87,500	113,300	77,700	634,150	2,445,600	75,534,600
September	724,850	99,750	604,150	129,500	39,050	84,700	112,550	78,850	631,650	2,505,050	75,151,500
October	741,350	97,900	598,550	129,950	38,800	83,550	114,000	83,300	624,450	2,511,850	77,867,800
November	715,750	96,600	586,350	135,100	38,600	83,000	109,700	81,150	653,050	2,499,300	74,978,300
December	710,610	97,110	603,370	14,010	37,330	81,330	113,480	74,550	697,790	2,557,900	79,295,150
1929											
Jan. 5	719,750	97,100	615,250	136,400	36,400	80,200	113,250	78,100	714,600	2,591,050	18,137,350
Jan. 12	717,950	97,150	618,400	137,500	36,650	79,150	112,500	72,550	721,800	2,593,650	18,155,250
Jan. 19	723,650	97,150	630,950	138,250	36,300	78,250	111,750	74,600	753,300	2,644,200	18,509,400
Increase	5,700	.....	12,550	750	.....	.....	.....	2,050	31,500	50,550	354,150
Decrease	.....	.....	.....	.....	350	900	750	.....	.....	.....	.....

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	Jan. 19	Jan. 12
Carson County	5,650	5,800
Gray County	23,200	21,900
Hutchinson County	27,700	27,800
Wheeler County	700	850
Others	2,300	2,400
Total	59,550	58,750

NORTH TEXAS

Archer County	18,000	18,250
Burkburnett	9,300	9,350
Electra	13,700	13,900
Iowa Park-KMA	6,000	6,400
Montague and Cooke Counties	9,850	9,650
Wilbarger	29,350	29,500
Others	550	550
Total	86,750	87,600

WEST CENTRAL TEXAS

Brown County	9,350	9,600
Callahan County	3,750	3,600
Coleman County	3,500	3,800
Eastland-Desdemona	6,800	6,850
Jack County	1,900	1,950
Palo Pinto County	400	400
Shackelford County	11,350	11,150
Stephens County	7,000	7,250
Throckmorton County	700	700
Young County	7,750	7,900
Others	700	700
Total	53,200	53,900

WEST TEXAS

Crane-Upton Counties	49,800	49,600
Crockett County	2,300	2,500
Howard County	38,900	33,200
Jones County	6,400	6,000
Mitchell-Scurry Counties	2,700	2,900
Pecos County	74,800	73,500
Reagan County	18,900	18,800
Winkler County	173,400	169,200
Others	1,550	2,000
Total	368,750	357,700

EAST CENTRAL TEXAS

Boggy Creek	2,600	2,700
Corsicana-Powell	9,400	9,700
Currie	500	500
Mexia	6,000	6,000
Nigger Creek	600	700
Richland	500	500
Wortham	1,400	1,400
Total	21,000	21,500

SOUTHWEST TEXAS

Dale	700	750
Laredo District	11,000	10,350
Luling	13,100	13,200
Lytton Springs	1,000	1,050
Somerset	650	700
Salt Flat	14,000	11,600
Others	1,850	1,300
Total	41,700	38,950
T'tl Tex. (Outside Gulf Coast)	630,950	618,400

TEXAS GULF COAST

Barbers Hill	2,100	2,450
Batson	1,300	1,300
Big Creek	2,600	2,700
Blue Ridge	5,000	5,750
Boling	2,450	2,650
Damon Mound	900	800
Goose Creek	6,200	6,350
Hull	9,700	9,950
Humble	5,300	5,000
Orange County	3,200	3,200
Pierce Junction	10,700	11,500
Raccoon Bend	1,500	1,700
Saratoga	900	900
Sour Lake	3,000	2,900
South Liberty	10,000	8,600
Spindle Top	33,400	33,550
Sugar Land	7,700	6,400
West Columbia	7,200	7,300
Others	2,800	3,100
Total	115,950	116,100
Texas Total	746,900	734,500

OKLAHOMA

Logan County	16,500	18,100
Braman	3,900	3,700
Blackwell	4,000	3,500
Hubbard	2,150	2,150
Thomas	950	950
Tonkawa	11,300	11,300
Garber	6,400	6,750
Burbank	23,300	24,300
Osage (outside Burbank)	26,800	26,450
Cushing	21,100	20,950
Yale Jennings	7,750	7,750
Davenport	1,650	1,650
Bristow Slick	19,150	19,500
North Okmulgee	14,250	14,300
Lyons Deaner	8,050	8,000
Cromwell	8,100	8,100
Papoose	3,550	3,600
Wewoka	5,400	5,200
Seminole	40,400	39,900
Bowlegs	43,500	43,650
Searight	9,000	9,050
Little River	96,500	92,800
Earlsboro	70,450	68,800
Duncan District	7,350	7,400
Graham	4,550	4,550
Fox	1,500	1,500
Healdton	13,250	13,300
Hewitt	8,750	8,800
Scholem Alechem	13,950	14,200
Pearson	1,650	1,700
St. Louis	129,700	132,200
Allen	27,300	26,550
Maud	27,850	25,150
Oklahoma City	5,750	5,700
Mission	800	...
Others	37,100	36,450
Total	723,650	719,750

CALIFORNIA

Santa Fe Springs	153,000	130,000
Long Beach	182,500	182,500
Huntington Beach	49,000	49,000
Torrance	15,000	15,500
Dominguez	10,000	10,000
Rosecrans	6,500	6,500
Inglewood	27,000	28,000
Midway-Sunset	73,000	73,000
Ventura Avenue	55,000	49,000
Seal Beach	28,000	28,000
Others	154,300	150,300
Total	753,300	721,800

KANSAS

Greenwood County	23,000	23,600
Florence-Covert	900	950
Peabody-Ebling	3,250	3,250
Eldorado-Towanda	12,400	12,750
Augusta-Fox Bush	2,950	3,050
Rainbow Bend	1,100	1,100
Russell	3,400	3,500
Churchill	7,450	7,550
Oxford	6,250	6,250
Sedgewick	7,450	6,150
Others	29,000	29,000
Total	97,150	97,150

NORTH LOUISIANA

	Jan. 19	Jan. 12
Homer	4,050	4,050
Haynesville	5,350	5,500
Caddo Light	9,050	9,150
Caddo Heavy	2,800	2,800
DeSoto-Red River	4,100	4,050
Elm Grove	600	600
Bellevue	750	750
Cotton Valley	3,250	3,250
Urania	5,850	6,000
Pleasant Hill	500	500
Totals North Louisiana	36,300	36,650

LOUISIANA GULF COAST

Bayou Bouillen	400	400
East Hackberry	6,150	5,350
Edgerly	800	850
Evangeline	800	900
Lockport	4,150	4,300
Sorrento	1,100	1,100
Sulphur Dome	3,200	2,950
Sweet Lake	800	900
Vinton	4,100	3,850
Others	800	800
Total Louisiana Gulf Coast	22,300	21,400
Louisiana Total	58,600	58,050

ARKANSAS

El Dorado	4,900	4,950
Champagnolle	10,600	10,900
Smackover Light	6,900	7,050
Smackover Heavy	51,750	51,900
Stephens	1,000	1,000
Nevada	1,400	1,550
Lisbon	1,600	1,700
Others	100	100
Total	78,250	79,150

MOUNTAIN STATES

WYOMING

Salt Creek	32,300	31,700
Grass Creek	2,350	2,350
Elk Basin	1,000	1,000
Big Muddy	2,500	2,500
Lost Soldier	3,650	3,750
Rock River	2,400	2,300
Lance Creek	350	350
Oregon Basin	2,050	2,050
Others	6,300	6,400
Total	52,900	52,400

MONTANA

Cat Creek	1,500	1,500
Sunburst	7,100	7,100
Pondera	2,850	2,250
Others	...	...
Total	11,450	10,850

COLORADO

Moffats (Craig)	1,000	1,000
Fort Collins	2,750	2,600
Florence	1,150	1,100
Others	2,200	2,150
Total	7,100	6,850

NEW MEXICO

Table Mesa	550	...
Artesia	1,050	1,100
Hogback	500	500
Rattlesnake	950	750
Others	100	100
Totals	3,150	2,450
Totals Mountain States	74,600	72,550

EASTERN STATES

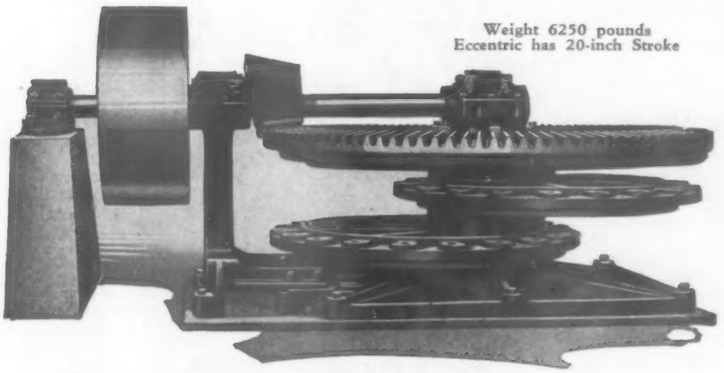
(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.)	111,750	112,500

PRODUCTION SUMMARY

East of Rockies	1,816,300	1,799,300
Total U. S.	2,644,200	2,593,650

A Heavy Under-Pull Power

With Two Eccentrics



Weight 6250 pounds
Eccentric has 20-inch Stroke

Now Equipped with Automatic Pump Lubrication

PATTIN PRODUCTS

- Gas Engines
- Air and Gas Compressors
- Vacuum Pumps
- Shackle Irons
- Pumping Powers
- Oil Country Boilers
- Steel Storage Tanks
- Water Pumps
- Torpedo Reels and Clamps
- High Pressure Tanks
- Howe Casing Heads

THE PATTIN BROS CO

THE power illustrated above is conceded to be one of the most powerfully geared powers on the market. A very heavy under-pull power with two eccentrics, each having a 20-in. stroke. The pinion shaft is supported on three bearings, which is a very important point, because tight belts soon pull ordinary powers out of line, resulting in broken gears.

This power is geared eight to one, the pinion is steel, and we have never had one fail on the heaviest of loads.

We recommend this power in place of the usual band wheel powers, and their expensive installation. If desired, we can furnish this power with one eccentric.

Write for prices, or inquire of any of our representatives

The Pattin Brothers Company

MARIETTA, OHIO

Tulsa, Okla.	Nowata, Okla.	Wichita Falls, Texas	Putnam, Texas	Bradford, Pa.
A. S. Dunnington	J. Barnes	J. W. Noland	Putnam Supply Co.	The Blaisdell Machinery Co.

CRUDE OIL PRICE QUOTATIONS

CRUDE PRICE CHANGES

Effective January 18, the principal purchasing companies in California reduced all California crudes below 24 gravity on an average of 15 cents a barrel. Light oils remain unchanged.

CURRENT POSTINGS

EASTERN STATES

	Jan. 22 1929
Penna Grade Oil in New York Transit Lines (New York	$4.10
Brandford District Oil in National Transit Lines (Pennsylvania)	4.10
Penna Grade Oil in National Transit Lines (Pennsylvania)	4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (July 13)	1.45
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s lines (August 8)	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (Aug. 8)	1.90
Somerset Oil in Cumberland Pipe Line lines (Kentucky) (Sept. 14, 1928)	1.75
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (August 1)	.95
Keister (Pennsylvania)	1.20

CENTRAL STATES

Illinois	1.55
Indiana	1.37
Lima	1.60
Plymouth	1.28
Princeton	1.55
Waterloo	1.35
Wooster	1.77

WESTERN KENTUCKY

Posted by Stoll Refining Company for crude from Allen, Warren, Franklin, Davies, Barren.

All grades	1.75

MID-CONTINENT

Carter Oil Company, Gulf Pipe Line Company, Sinclair Pipe Line Company, Prairie Oil and Gas Company and The Texas Company.*

25 to 25.9 gravity	:67
26 to 26.9 gravity	.74
27 to 27.9 gravity	.81
28 to 28.9 gravity	.81
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.09
32 to 32.9 gravity	1.16

	Jan. 22 1929
33 to 33.9 gravity	1.21
34 to 34.9 gravity	1.26
35 to 35.9 gravity	1.31
36 to 36.9 gravity	1.36
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.46
39 to 39.9 gravity	1.51
40 to 40.9 gravity	1.56
41 to 41.9 gravity	1.61
42 to 42.9 gravity	1.66
43 to 43.9 gravity	1.71
44 and above	1.76

*The Texas Company posts a price of 60 cents on 24 to 24.9 gravity, and Gulf's posting begins at 28 to 28.9.

MID-CONTINENT

Magnolia Petroleum Company

Below 25 gravity	.60
25 to 25.9 gravity	.67
26 to 26.9 gravity	.74
27 to 29.9 gravity	.75
30 to 30.9 gravity	.90
31 to 31.9 gravity	1.05
32 to 32.9 gravity	1.16

From 33 to 44 gravity and above, Magnolia Petroleum Company prices are the same as those of Carter Oil Company.

NORTH AND CENTRAL TEXAS

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude (Humble Oil and Refining Company)*

25 to 25.9 gravity	.67
26 to 26.9 gravity	.74
27 to 27.9 gravity	.81
28 to 28.9 gravity	.88
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.09
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.21
34 to 34.9 gravity	1.26
35 to 35.9 gravity	1.31
36 to 36.9 gravity	1.36
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.46
39 to 39.9 gravity	1.51
40 to 40.9 gravity	1.56
41 to 41.9 gravity	1.61
42 to 42.9 gravity	1.66
43 to 43.9 gravity	1.71
44 and above	1.76

	Jan. 2 1929
SOUTH TEXAS	
Mirando	$ .8

SOMERSET

Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

GULF COAST

Grade "A" all companies	1.20
Gulf Coast Light Oil, below 25	1.15
25 to 25.9 gravity	1.17
26 to 26.9 gravity	1.19
27 to 27.9 gravity	1.21
28 to 28.9 gravity	1.23
29 to 29.9 gravity	1.25
30 to 30.9 gravity	1.27
31 to 31.9 gravity	1.29
32 to 32.9 gravity	1.31
33 to 33.9 gravity	1.33
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.37
36 to 36.9 gravity	1.39
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.43
39 to 39.9 gravity	1.45
40 and above	1.47

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9 Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

MARKHAM

The Texas Company

All grades	1.00

LULING

All grades	.80

PANHANDLE GRAY COUNTY

(Humble Oil & Refining Company, Magnolia Petroleum Company, Gulf Pipe Line Company and Sinclair Pipe Line Company).

Below 29 gravity	.68
29 to 29.9 gravity	.75
30 to 30.9 gravity	.82
31 to 31.9 gravity	.89
32 to 32.9 gravity	.96
33 to 33.9 gravity	1.01
34 to 34.9 gravity	1.06

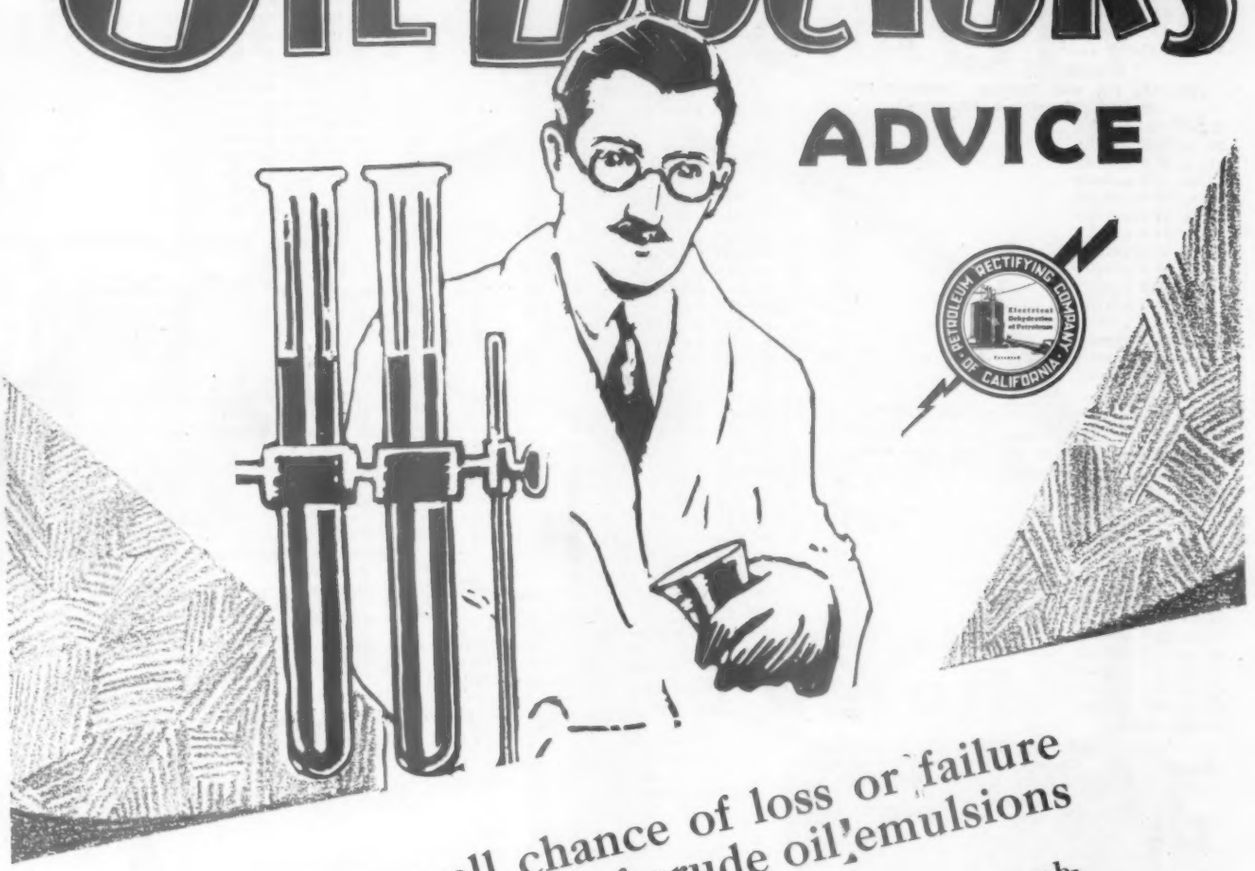
CALIFORNIA CRUDE OIL PRICES AT THE WELL

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity	Signal Hill	Alamitos Heights-Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ 70	$ .70	$ .70	$ .70	..	$ .50	$ .50	$ .50	$ .50	$ .50	$ .50
15-15.9	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
16-16.9	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
17-17.9	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
18-18.9	.75	.75	.75	.75	.75	..	..	.75	.75	.75	.70	.75	..	.50	.56	.56	.56	.56	.56
19-19.9	.80	.80	.80	.80	.80	..	..	.80	.80	.80	.75	.80	..	.50	.62	.62	.62	.62	.62
20-20.9	.85	.85	.85	.85	.85	..	..	.85	.85	.84	.80	.84	..	..	.68	.68	.68	.68	.68
21-21.9	.89	.89	.89	.89	.89	..	..	.89	.89	.88	.85	.88	.89	..	.74	.74	.74	.74	.74
22-22.9	.93	.93	.93	.93	.93	..	..	.93	.93	.91	.90	.91	.92	..	.80	.80	.80	.80	.80
23-23.9	.97	.97	.97	.97	.97	..	..	.97	.97	..	.95	.94	.95	..	.85	.85	.85	.85	.85
24-24.9	1.01	1.01	1.01	1.01	1.01	1.01	.94	1.01	1.01	..	.98	.97	.98	..	.90	.90	.90	.88	.88
25-25.9	1.05	1.05	1.05	1.05	1.05	1.05	.98	1.05	1.05	..	1.01	1.00	1.01	..	.95	.95	.95	.91	.91
26-26.9	1.09	1.09	1.09	1.09	1.09	1.09	1.02	1.09	1.09	..	1.04	1.04	1.04	..	1.00	1.00	1.00	.94	.94
27-27.9	1.13	1.13	1.13	1.13	1.13	1.13	1.06	1.13	1.13	..	1.07	1.08	1.07	..	1.05	1.05	1.05	.98	.97
28-28.9	1.17	1.17	1.17	1.17	1.17	1.17	1.10	1.17	1.17	..	1.10	1.12	1.10	..	1.10	1.10	1.10	1.02	..
29-29.9	1.21	1.21	1.21	..	1.21	1.21	1.14	..	1.21	..	1.13	1.16	1.15	..	1.16	1.16	1.16	1.06	..
30-30.9	1.25	1.25	1.25	..	1.25	1.25	1.18	..	1.25	..	1.16	1.20	1.20	..	1.22	1.22	1.22	1.10	..
31-31.9	1.30	1.30	1.30	..	..	1.30	1.23	..	..	..	..	..	1.25	..	1.28	1.28	1.28	1.14	..
32-32.9	1.35	1.35	1.35	..	..	1.35	1.28	..	..	..	..	..	1.30	..	1.34	1.34	1.34	1.18	..
33-33.9	..	..	..	..	..	1.41	1.34	..	..	..	..	..	1.35	..	1.40	1.40	1.40	1.22	..
34-34.9	..	..	..	..	..	1.47	1.40	..	..	..	..	..	1.40	..	..	..	1.46	1.26	..
35-35.9	..	..	..	..	..	1.53	1.46	..	..	..	..	..	1.45	..	..	..	..	1.30	..
36-36.9	..	..	..	..	..	1.59	1.52	..	..	..	..	..	1.50	..	..	..	..	..	..
37-37.9	..	..	..	..	..	1.65	1.58	..	..	..	..	..	1.55	..	..	..	..	..	..
38-38.9	..	..	..	..	..	1.71	1.64	..	..	..	..	..	1.60	..	..	..	..	..	..
39-39.9	..	..	..	..	..	1.77	1.70	..	..	..	..	..	1.65	..	..	..	..	..	..
40-40.9	..	..	..	..	..	1.83	1.76	..	..	..	..	..	..	..	..	..	..	..	..
41-41.9	..	..	..	..	..	1.89	1.82	..	..	..	..	..	..	..	..	..	..	..	..
42-42.9	..	..	..	..	..	1.95	1.88	..	..	..	..	..	..	..	..	..	..	..	..

KETTLEMAN HILLS—55 degree Gravity and above $1.65 per barrel.

THE OFFICIAL OIL DOCTOR'S ADVICE



Eliminates all chance of loss or failure in the treatment of crude oil emulsions

THE Official Oil Doctor never *takes a chance* on results. His findings are based on exhaustive analysis and tests to determine exactly what results of treatment will be.

In fact, actual results are achieved — then, his recommendations are exact reports of accomplishment.

If you have "cut oil" problems, your surest route to efficient, economical, profitable solution of them is through the Official Oil Doctor and his staff of petroleum engineers. His services are available at all times—inquiries entail no obligation whatsoever.

PETROLEUM RECTIFYING COMPANY OF CALIFORNIA
530 West 6th Street, Los Angeles, Calif.
Security Title Insurance Bldg.
Petroleum Bldg. Houston, Texas

	Jan. 22 1929
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.16
37 to 37.9 gravity	1.21
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.31
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.41
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.51
44 and above	1.56

WHEELER COUNTY
(Humble Oil and Refining Company and Magnolia Petroleum Company)

Below 30 gravity	.65
30 to 30.9 gravity	.72
31 to 31.9 gravity	.79
32 to 32.9 gravity	.86
33 to 33.9 gravity	.91
34 to 34.9 gravity	.96
35 to 35.9 gravity	1.01
36 to 36.9 gravity	1.06
37 to 37.9 gravity	1.11
38 to 38.9 gravity	1.16
39 to 39.9 gravity	1.21
40 to 40.9 gravity	1.26
41 to 41.9 gravity	1.31
42 to 42.9 gravity	1.36
43 to 43.9 gravity	1.41
44 and above	1.46

CARSON-HUTCHINSON COUNTIES
(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company)

Below 32 gravity	.69
32 to 32.9 gravity	.76
33 to 33.9 gravity	.81
34 to 34.9 gravity	.86
35 to 35.9 gravity	.91
36 to 36.9 gravity	.96
37 to 37.9 gravity	1.01
38 to 38.9 gravity	1.06
39 to 39.9 gravity	1.11
40 to 40.9 gravity	1.16
41 to 41.9 gravity	1.21
42 to 42.9 gravity	1.26
43 to 43.9 gravity	1.31
44 and above	1.36

WEST TEXAS
(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*

Crane-Upton, Crockett, Pecos and Winkler Counties, all grades	.65

*Gulf does not post in Winkler County; Magnolia posts in Crane, Upton and Winkler Counties and that part of Glasscock not included in the Chalk field. The Marland Company posts only in Crane, Upton and Crockett Counties; Southern posts only in Crane, Upton and Winkler Counties.

(Magnolia Petroleum Company)

Mitchell County	$ .80
Howard-Glasscock County (shallow)	.80
Howard-Glasscock County (deep)	.65

Col-Tex Refining Company

Howard and Mitchell Counties	$ .80

WYOMING-MONTANA
Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.48
Grass Creek	1.48
Rock Creek	1.33
Lost Soldier	.95
Lance Creek	1.48
Mule Creek	1.10
Notches	.65
Big Muddy	1.33
Osage	1.33
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.33
Lander	.80
Simpson Ridge	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek
Midwest Refining Company

29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 and above	1.30

	Jan. 22 1929
MONTANA	
Sunburst	$1.65
Cat Creek	1.33
Lake Basin	2.20
NEW MEXICO	
Artesia	1.08
Hogback	1.38
CANADA	
Oil Springs	2.07
Petrolia	2.00

NORTH LOUISIANA
(The Texas Company)

24 to 24.9 gravity	.76
25 to 25.9 gravity	.81
26 to 26.9 gravity	.86
27 to 27.9 gravity	.91
28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49
44 to 44.9 gravity	1.52
45 to 45.9 gravity	1.55
46 to 46.9 gravity	1.58
47 to 47.9 gravity	1.61
48 to 48.9 gravity	1.64
49 to 49.9 gravity	1.67
50 to 50.9 gravity	1.70
51 to 51.9 gravity	1.73
52 and above	1.76

LOUISIANA-ARKANSAS
Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley*
(Atlantic Oil Producing Company, Standard of Louisiana, Magnolia Petroleum Company and The Texas Company).

	Jan. 22 1929
27 to 27.9 gravity	.81
28 to 28.9 gravity	.88
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.09
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.21
34 to 34.9 gravity	1.26
35 to 35.9 gravity	1.31
36 to 36.9 gravity	1.36
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.46
39 to 39.9 gravity	1.51
40 to 40.9 gravity	1.56
41 to 41.9 gravity	1.61
42 to 42.9 gravity	1.66
43 to 43.9 gravity	1.71
44 gravity and above	1.76

*Shreveport-Eldorado's postings stop at above 40 gravity.

**Below 36 gravity, the posting on Cotton Valley is 75 cents. From 36 to 52 and above the regular gravity schedule is followed.

STEPHENS
(All Companies)

Below 28 gravity	.75
28 to 28.9 gravity	.79
29 to 29.9 gravity	.83
30 to 30.9 gravity	.87
31 to 31.9 gravity	.91
32 gravity and above	.95

SMACKOVER
(All Companies)

Below 24 gravity	.75
24 and above	.90
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	.85
Calion	.75

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

American Petroleum Institute Figures (Barrels of 42 gallons)

	Week Ended Jan. 12	Week Ended Jan. 5
AT ATLANTIC COAST PORTS—		
Baltimore	112,000	.....
Boston	141,000	*212,000
New York	750,000	1,606,000
Philadelphia	201,000	512,000
Others	65,000	*149,000
Total	1,269,000	2,479,000
Daily Average	181,286	354,143
A GULF COAST PORTS—		
Galveston District	.....	.....
New Orleans and Baton Rouge	62,000	150,000
Port Arthur and Sabine District	.....	*65,000
Tampa	.....	.....
Total	62,000	215,000
Daily Average	8,857	30,714
AT ALL UNITED STATES PORTS—		
Total	1,331,000	2,694,000
Daily Average	190,143	384,857
Daily Average Four Weeks Ended	260,143	273,536

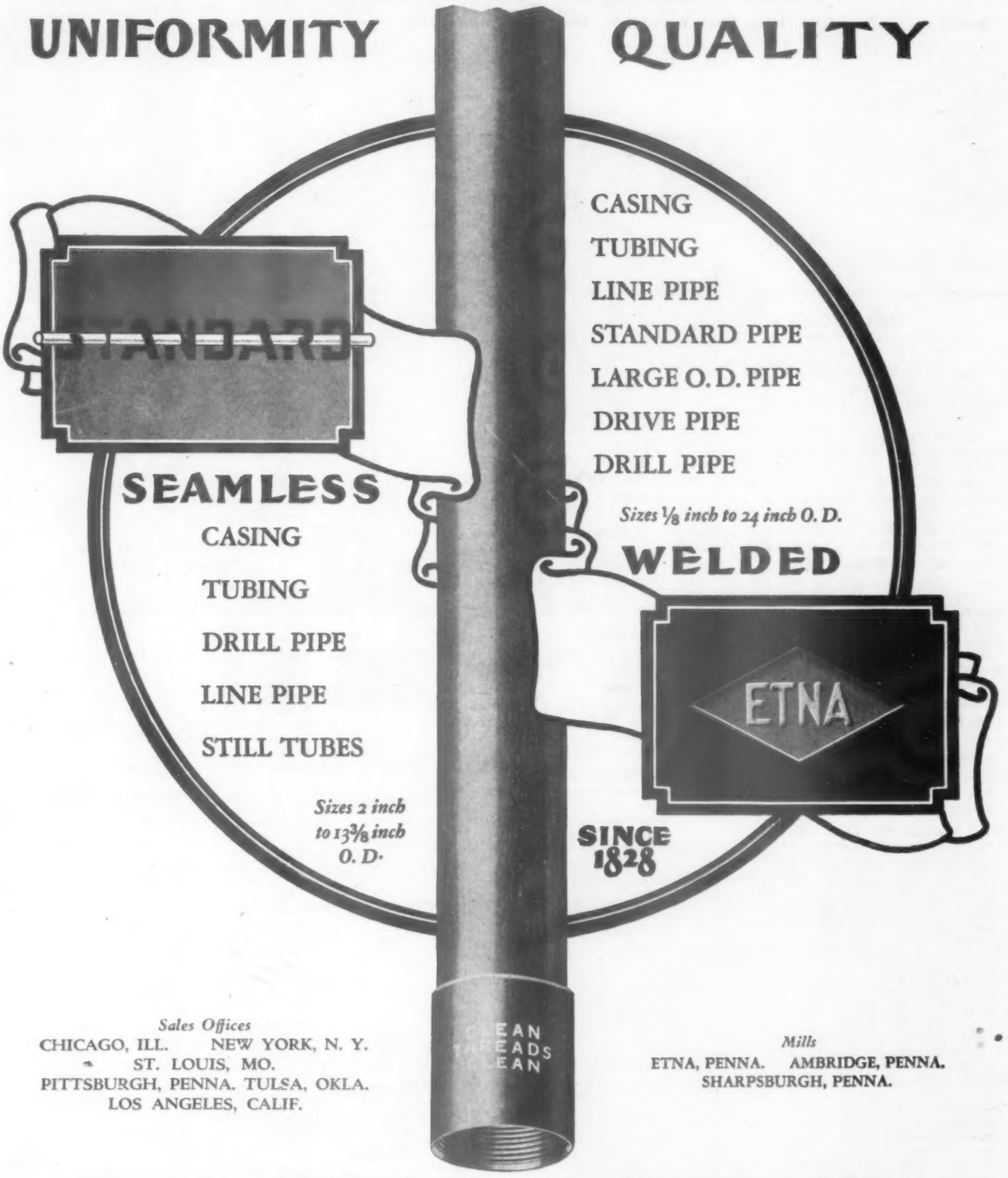
*Revised.

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

American Petroleum Institute Figures (Barrels of 42 gallons)

	Week Ended Jan. 12	Week Ended Jan. 5
AT ATLANTIC COAST PORTS—		
Baltimore	153,000	.....
Boston	.....	.....
New York	76,000	.....
Philadelphia	78,000	159,000
Others	.....	78,000
Total	307,000	237,000
Daily Average	43,857	33,857
AT GULF COAST PORTS—		
Total	80,000	80,000
Daily Average	11,429	11,428
TOTAL—ATLANTIC AND GULF COST PORTS	387,000	317,000
Daily Average	55,286	45,285
Daily Average Four Weeks Ended	55,357	49,643
Distribution of Total California Oil Receipts is as Follows:		
Crude	.....	.....
Gasoline	387,000	239,000
Gas Oil	.....	.....
Kerosene Dist.	.....	78,000
Total	387,000	317,000

Assured
DEPENDABILITY
UNIFORMITY QUALITY



Sales Offices
CHICAGO, ILL. NEW YORK, N. Y.
ST. LOUIS, MO.
PITTSBURGH, PENNA. TULSA, OKLA.
LOS ANGELES, CALIF.

Mills
ETNA, PENNA. AMBRIDGE, PENNA.
SHARPSBURGH, PENNA.

SPANG, CHALFANT & CO., INC.
GENERAL OFFICES, CLARK BUILDING
PITTSBURGH, PA.

Say you saw it in The OIL WEEKLY

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week Jan. 12	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	3	3	..	2	2	1	1	..	...	2,408
California	21	24	21	21	..	..	..	3	48,285	35,655
Illinois	4	3	3	2	..	..	1	1	262	29
Indiana	4	5	2	1	1	..	1	4	51	10
Kansas	8	21	4	10	..	3	4	8	285	1,122
Kentucky	21	25	8	16	2	..	11	9	235	474
Louisiana	10	17	4	..	..	6	6	11	2,516	...
Michigan	8	4	4	2	1	1	3	1	2,250	375
New York	18	19	18	19	..	..	..	..	55	83
Ohio	31	40	12	7	12	24	7	9	155	202
Oklahoma	45	69	19	33	3	5	23	31	16,660	21,796
Pennsylvania	40	70	40	61	..	2	..	7	352	228
Texas	147	170	87	97	4	13	56	60	123,049	78,653
West Virginia	8	12	3	..	4	11	1	1	62	...
Total	368	482	225	271	29	66	114	145	194,217	141,035
Increase this week	..	..	..	..	..	..	..	..	53,182	...
Decrease this week	114	..	46	..	37	..	31	..	...	...

OKLAHOMA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
Magnolia, Winters 3, se sw se, 19-1s-3w	*	4820
GRADY COUNTY—		
Magnolia, Skervin-Farwell 9, nw se, 23-5n-6w	¶22	2300
KAY COUNTY—		
Wilson et al, Gilbert 1, cel nw, 24-27-1e	¶½	775
Royal O. & G. Co., Fulton 2, c sw ne, 12-28-1w	*	Lctn.
KIOWA COUNTY—		
Ford, Foster & Duncan, sw cor, 8-6n-16w	*	490
Frank Kotch, Malerne 1, sw se, 11-6n-15w	*	490
Burke et al, Fox 1, ne nw se, 5-6n-16w	*	650
Lyons & Worley, Stone 1, se ne, 12-6n-17w	*	585
LOGAN COUNTY—		
Shell Pet. Corp., Freelove 3, sw nw sw, 17-19-4w	*	3147
MUSKOGEE COUNTY—		
Smith & Durham, Williams 1, ne nw, 19-13-19e	¶4	800
NOBLE COUNTY—		
Wirt Franklin Oil Corp., Haskill Irwin 1, se nw, 20-21-1w	*	5367
OKFUSKEE COUNTY—		
W. L. Umburn, Simmer 7, cnl ne se, 11-10-11e	30	2006
Atlantic Oil Prod. Co., Micco 1, nw sw sw, 12-10-11e	90	2073
Champlin Ref. Co., Jacobs 1, nw sw se, 15-11-11e (OWDD)	200	3492
OKLAHOMA COUNTY—		
I. T. I. Oil Co., Trosper Park 1, c se se, 24-11-3w	6565	6498
OKMULGEE COUNTY—		
J. H. Rebold & Co., Williams 6, ne nw ne, 22-13-12e	30	2900
The Texas Co., Severs 10, csl se ne, 20-15-14e	25	1315
Tidal Oil Co., Fisher 1, se nw nw, 7-12-12e	*	2940
Alexander Massey, Rentie 6, csl sw sw, 1-13-14e	*	2680
Taylor & Geiger, Smith 12, sw cor, 36-14-14e	*	1306
Shelden Oil Co., Williams 1, nw sw se, 14-14-11e	*	2773
Shaffer O. & R. Co. et al, Bell 1, sw ne, 30-14-12e	*	2877
Unger Bros., Harrison 8, e se sw, 24-15-14e	*	1650
Curtis Oil Co., Fisher 2, se nw ne, 12-15-12e	*	1561
OSAGE COUNTY—		
Devonian Oil Co. No. 2, ne se se, 10-20-11e	15	2310
Atlantic, No. 1, ne sw ne, 19-24-8e	30	2850
Peters Pet. Co. No. 8, c nw, 26-25-9e	50	2245
Plains Pet. Co. No. 1, se sw sw, 32-21-11e	*	1716
Empire, No. 2A, ne sw ne, 12-25-5e	*	3265
POTTAWATOMIE COUNTY—		
Atlantic & Phillips, Bank 1, sw ne ne, 11-9-4e	*	4670
SEMINOLE COUNTY—		
The Texas Co., Janey 6, se nw sw, 11-7-6e	130	4435
Carter, Harjo 4, se nw sw, 13-7-6e	2600	4403
Gypsy, Coker 1, ne se, 10-8-5e	900	4263
Slick & Skelly, Campbell 5, se ne nw, 6-9-6e	2749	4138
Campbell 3, sw nw ne, 6-9-6e	385	4338
T. B. Slick, James 3, ne se sw, 6-9-6e	867	4317
James 2, nw se sw, 6-9-6e	589	4396
Skelly & Atlantic, Sherry 2A, nw sw, 6-9-6e	457	4392
Skelly, Shepherd 2, se sw nw, 6-9-6e	873	4336
Tidal Oil Co., Harrison 1, sw cor, 2-7-7e	*	4726
Phillips, Keenan 1, se cor, 6-8-5e	*	4476
STEPHENS COUNTY—		
Schermerhorn et al, Shields 5, sw ne sw, 13-1s-4w	75	2906
American Pipe Line Co., Nigh 3, nw se nw, 34-1s-8w	*	2230
Kidney et al, Dare 1, se sw nw, 1-2s-8w	*	2246
WAGONER COUNTY—		
C. A. DeVazzard et al, Sier 1, nw se, 10-18-15e	*	1177

KANSAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Rosenthal et al, Schaffer 12, ne sw se, 4-27-6e	150	3160
Amerada, Bolin 1, sw se nw, 36-26-6e	*	3248
ELK COUNTY—		
Sharkey & Ames, Townlot 1, sw se sw, 10-31-10e	20	2011
GREENWOOD COUNTY—		
Mohawk Oil Co., Grundy 4, sw se nw, 7-27-11e	100	1892
Empire, Schwab "A" 15, se sw ne, 25-22-12e	15	1727
Prairie and Parrish, Smith 1, nw ne nw, 6-24-12e	*	1887
Pryor, Lockhart and White Eagle, Wenzler 3, sw se nw, 29-22-13e	*	1818
MARION COUNTY—		
Empire, Bucket 1, se ne ne, 11-20-3e	*	2609

CALIFORNIA

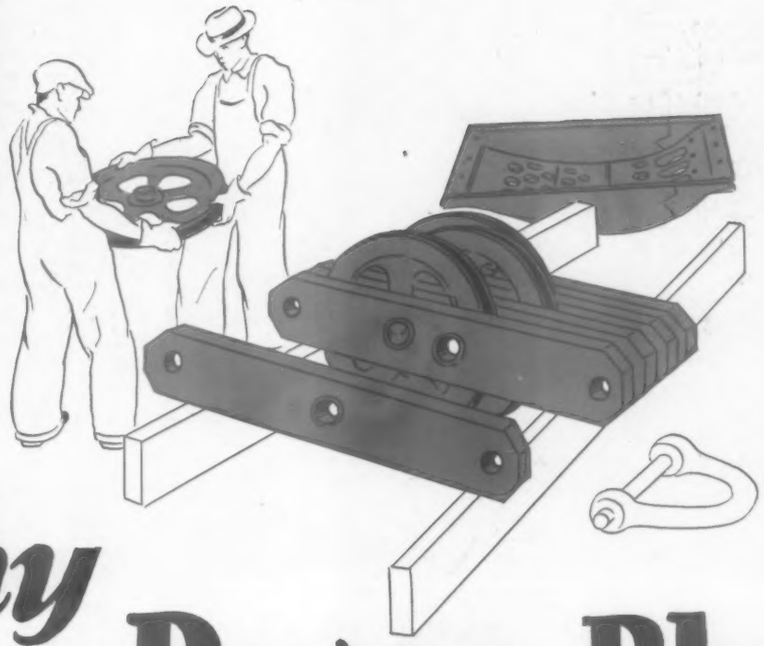
Completions

Company, Well and Location	Initial Production Bbls.	Depth
BELRIDGE—		
Ohio Oil Co., No. 22, 30-28-21	25	715
ELWOOD—		
Rio Grande Oil Co.—Barnsdall Oil Co., Doty 2	4100	3490
KERN FRONT—		
Associated Oil Co., No. 54, 23-28-27	250	2240
Chanslor-Canfield Midway Oil Co., No. 11, 23-28-27	175	2310
LONG BEACH—		
Boyd Hammond, No. 3	400	5378
Richfield Oil Co., Simplex 3	1300	6830
L. T. Edwards, Brayton 2	300	7160
The Petroleum Co., Hawkeye 2	1300	6090
Beck 4	1900	6010
RICHFIELD—		
Continental Oil Co., Richfield 2	625	4400
SANTA FE SPRINGS—		
General Pet. Corp., Hill-Midway 103	3300	5740
Santa Fe 179-E	3200	4990
Santa Fe 191-C	3750	5750
Standard Oil Co., Koontz 7	1300	5820
The Texas Co., Foix 6	6300	5400
Union Oil Co., Bell 32	5500	5415
Bell 33	6500	5400
Wilshire Oil Co., Crawford 1-A	2000	5640
SOUTH MOUNTAIN—		
The Texas Co., Harvey 23	160	3310
VENTURA—		
Pacific-Western Oil Co., Orton 11	2400	6950
Orton 13	3500	6535

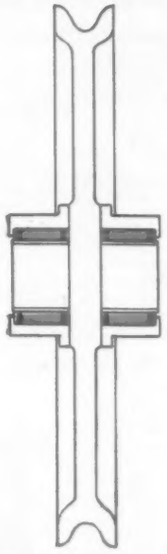
EASTERN STATES

PENNSYLVANIA

BRADFORD FIELD—		
South Penn Oil Co., Bingham 499, tr 4	4	....
Bingham 576, tr 14	5	....
Bingham 423, tr 18	2	....
Bingham 410, tr 39	2	....
Bingham 439, tr 118	2	....
Bingham 450, tr 99	3	....
Bingham 453, tr 2	3	....
Bingham 100, tr 64	pressure	....
Bingham-Satterfield, 148	3	....
Taylor, 32	2	....
Hazlewood Oil Co., Hazlewood 17	7	....
Lot 23, tr 113	2	....
W. C. Kennedy Co., Kennedy 72	2	....
C. R. Bush & Co., Bush 2	4	....
Dana & Dana, Kinley Oil 3	3	....
R. O. Landers & Co., Landers 9	3	....
E. Daly, Burns 1	3	....
G. C. Rice & Co., Weston 6	2	....
J. A. Walters Estate, Walters 11	4	....
G. W. Crooks & Co., Franchot 7	3	....
Davis Oil Corp., Davis 20	2	....
Parker Farm Oil Co., Clugston 1	2	....
Parmeter Bros., Parmeter 1	3	....
D. Hoffman Est., Hoffman 2	2	....
John Zane Est., Qunitruple 39	3	....
Pressure Oil Co., Doubleday 4	3	....
A. L. & L. M. Lilly, Middaugh 31	3	....
Robert Jones, Franchot 18	3	....
BUTLER COUNTY—		
Phillips O. & G. Co., Harvey 2	240	....
CLARION COUNTY—		
Roy Edinger, Edinger 3	2	....
H. J. Crawford, Hess 5	2	....
Clinger, Kopp & Co., Boone 4	2	....
GREENE COUNTY—		
Carnegie Nat. Gas Co., Rutan 6	10	....
VENANGO COUNTY—		
S. G. Milton, Milton 77	2	....
J. E. Kerling, Schwab 4	2	....
Covert, Riddle & Co., McKee 2	2	....
C. R. Bunny & Co., Drake 8	2	....
W. W. Reagle, Reagle 16	2	....
CENTER-MIDDLE FIELD—		
Nelson & Johnson, McWilliams 1	2	....
J. Shamonskey, Shamonskey 30	2	....
J. E. Howe, Howe 12	2	...



Why a Regan Block is *never* junked!



Regan Bearings built for wear. The pin is integral and a bearing is placed on each side, which greatly increases bearing surface and which permits increased life.

The entire block can be easily disassembled and any minor replacements quickly made on the derrick floor. Reassembled, the block will be "as good as new."

Regan Forge & Engineering Co.
Manufacturers of Oil Well Equipment
Quality
San Pedro, California U.S.A.

Main Office, Mid-Continent Division:
Dallas, Texas, 1504 Magnolia Bldg.
Oklahoma City, Okla., 2420 W. 21st St.
New York City, 75 West St.
Wm. Braat, Manager
Maracaibo, Venezuela, Wm. Adams, care Amer. Consul
Pecos, Texas, P. O. Box 444
Pampa, Texas

NEW YORK

Company, Well and Location	Initial Production Bbls.	Depth
ALLEGANY COUNTY—		
Forest Oil Co., Franchot 1	2	....
N. V. V. Franchot, Franchot 25	4	....
F. H. Stephan, Culbertson 1	2	....
F. L. Putnam & Co., Putnam 2	3	....
J. W. Johnson, Johnson 4	2	....
Reeland & Co., South Penn 4	7	....
C. M. Robinson & Co., Robinson 1	2	....
Murphy & Co., Murphy 2	2	....
F. L. Williams, Williams 1	2	....
J. Meridian & Co., Meridian 4	7	....
P. W. Burdick & Co., Kinley 5	4	....
Kinley 6	3	....
Fairview Oil Co., Fairview 1	2	....
Cuba Nat. Bank Co., Cuba Bank 20	3	....
C. C. Brennan & Co., Brennan 1	2	....
J. M. Hughes & Co., Hughes 8	3	....
C. M. Barnes & Co., Barnes 5	3	....
Milton Oil Co., Milton 1	2	....
WEST VIRGINIA		
JACKSON COUNTY—		
Heck Oil Co., Hartley 1	2	....
South Penn Oil Co., McCarty 1	40	....
ROANE COUNTY—		
South Penn Oil Co., Stockley 88	20	....
CLAY COUNTY—		
Hamilton Gas Co., Mullinax 1	¶¼	....
RITCHIE COUNTY—		
Imperial Oil Co., Cox 1	¶½	....
MARION COUNTY—		
Philadelphia Oil Co., Lemley 1	¶2	....
MONONGALIA COUNTY—		
Pittsburg & W. Va. Gas Co., Wilson 1	¶1½	....
LEWIS COUNTY—		
William Smith, Jewell 1	*	....
KENTUCKY		
OHIO COUNTY—		
Jas. C. Ellis, Cundiff 7	50	....
Gossett 11	50	....
Wood Oil Co., Smith 7	50	434
Duke 6	50	448
Arnold & Co., Baker Bros. 2	3	532
Sunnydale Oil & Gas Co., Russell 1	*	650
Bigler & Becker, Hendricks 7	*	....
DAVIESS COUNTY—		
Huff & Calderwood, Salmon 2	30	870
Thompson & Co., Asher 1	*	....
Leeper Oil Co., Veach 5	*	....
Petroleum Exploration Co., Barrett 1	*	....
H. A. Henry, Salmon 1	*	....
Huff & Calderwell, Widow Miller 1	*	....
ALLEN COUNTY—		
J. D. White, Williams 10	1	363
D. D. Defenbaugh, Beam 2	*	384
ROWAN COUNTY—		
E. R. Maggard & Co., Sugar Loaf Hill 1	¶2	....
WARREN COUNTY—		
Ohio Oil Co., Justice 1	1	966
HANCOCK COUNTY—		
B. Calvert, Brown 1	*	....
LEE-OWSLEY COUNTIES—		
Petroleum Exploration Co. 1	¶¼	....
CLAY COUNTY—		
Petroleum Explo. Co., Cupp 1	*	....
HARDIN COUNTY—		
Petroleum Explo. Co., Dunaway 1	*	....
ILLINOIS		
WABASH COUNTY—		
Ridge Farm Oil Co., Price 4	15	1575
Boeger Oil Co., Stillwell 2	10	1810
Leighty & Co., Prout 1	*	1575
CRAWFORD COUNTY—		
J. F. Bolinger, Evans 3	12	994
MICHIGAN		
MUSKEGON COUNTY—		
Swastika Oil Co., Gilbert 1	1500	2037
Nelson & Witt, Andree 1	400	2048
Concord O. & G. Co., Lewis 1	¶3 300	2018
Holland O. & G. Co., Joslyn 1	50	2068
Joliet-Morris Dev. Co., Kooi 1	¶12	2045
Liberty Oil Co., Metzke 1	*	....
Johnson O. & R. Co., Van Allsburg 2	*	2066
Brien & Brien, Fagan 2	*	2035
MASON COUNTY—		
Welsh-Taggart Co., Logan Twp. 1	gas	....
SOUTHEASTERN OHIO		
WASHINGTON COUNTY—		
Henderson Oil Co., Kalb 4	1	2093
Gibson & Son, Van Wormer 3	8	1232
Homer Newhart & Co., Payne 2	2	....
Gasoline Prod. Co., Penrose 2	¶¼	1471
Schramm & Co., Schramm 1	¶1½	1041
Dinsmoor Bros., Bell 30	¶½	1155
MONROE COUNTY—		
Local Oil Co., Stimpert 3	2	1358
Crawford Bros & Co., Slabugh 3	*	625
MORGAN COUNTY—		
The Kemfow Co., Hummell-Huffman 5	¶¼	1618
Mosier 2	¶¼	1570
BELMONT COUNTY—		
J. B. Mechan, Mechan 1	8	1911
CENTRAL OHIO		
HOLMES COUNTY—		
Ohio Fuel Gas Co., Kurtz 1	¶3¼	....
Lydic O. & G. Co., Allison 2	¶¼	850
Bird 4	¶¼	800
Bird 5	¶¼	800
PERRY COUNTY—		
Pure Oil Co., Moore 2	30	....
Northern Dev. Co., Pemberton 1	15	3490
A. J. Colgan & Co., Wilson 1	*	3547
LICKING COUNTY—		
Hulse & Kundtz, Chaney 6	*	....
Whitehill Gas Co., Ashcraft 8	10	684
H. C. Farmer, Baughman 5	¶¼	714
ASHLAND COUNTY—		
Robison & Co., Strine 8	25	....
The Kemrow Co., Miller 2	*	....
MEIGS COUNTY—		
Sutton Bros., Moore-Williamson 1	3	1736
Pure Oil Co., Deer 1	1	777
COSHOCTON COUNTY—		
Pure Oil Co., Mohler 1	50	3430
LORAIN COUNTY—		
Ohio Fuel Gas Co., Osborne 1	¶¼	....
WAYNE COUNTY—		
Logan Gas Co., Fuhrman 1	¶1¼	....
GUERNSEY COUNTY—		
Ohio Fuel Gas Co., Dillon 1	*	3388
JACKSON COUNTY—		
Ohio Fuel Gas Co., Buckley 1	*	2584
LAWRENCE COUNTY—		
Ohio Fuel Gas Co., Bellville 1	*	3559
INDIANA		
GIBSON COUNTY—		
Gem Oil Corp., Ferris 2	41	1352
Wm. Bell & Co., Ewing 1	10	1800
PIKE COUNTY—		
Bowman & Co., McKallip 1	¶¼	1177
SPENCER COUNTY—		
C. Walter Randolph & Co., Kinney Hrs. 1	*	1259
SOUTHWEST TEXAS		
DUVAL COUNTY—		
Robt. Driscoll, Fee 13, sur 448	¶40	2475
The Texas Co., Hahl 2, Schoolfield-O'Byrne pool	140	2349
JIM HOGG COUNTY—		
Randado Oil Corp., Palacios 27, blk 14, sur 291	100	1276
Palacios 28, blk 2, sur 291	40	1305
WEBB COUNTY—		
O. W. Killam, Bruni 31, blk 84, Bruni subdiv.	25	2209
Cole Pet. Co., Benavides 66, Cole fld, blk 4, sur 412	150	2338
Simms Oil Co., Dinn 3, Cole field	¶2	....
ZAPATA COUNTY—		
O. W. Killam, Cuellar 9, Cerrito Blanco Grant	50	1470
SALT FLAT—		
J. S. Abercrombie et al, Moses 4	150	2708
Moses 5	150	2721
DeArmond et al, Wright 1	¶50	957
Humble, W. F. Davis 2	130	2707
Golden West Oil Co., Geo. Cook 1	*	2763
Lang & Witherspoon, Walker 2	*	1526
Shell, Tiller 1	170	2715
Malone 2	450	2710
School Land 1	*	95
Gulf, J. Smith 1	110	2717
The Texas Co., Moses 1	43	2641
Sun Oil Co., Malone 4	250	2714
UNION COUNTY—		
Pure Oil Co., M. H. Nash 1, 7-17-13	*	3260
Rovenger Oil Co., W. H. Perdue B-1, 9-17-14	¶43	2805
Alson Bros., Kelly 1, 9-17-14	¶35	2806
NORTH LOUISIANA		
BIENVILLE PARISH—		
W. G. Gray, Tr., Johnson 1, 21-18-6	*	2930
CADDO PARISH—		
Dixie Oil Co., Robertshaw 53, 13-21-15	*	3757
LA SALLE PARISH—		
M. H. King, M. H. King 1, 13-10-1e	*	1520
WEBSTER PARISH—		
Magnolia Pet. Co., Scroggins 1, 1-22-11	158	2709
SOUTH LOUISIANA		
EAST HACKBERRY—		
Calcasieu Oil Co., Watkins 12	900	3964
HACKBERRY—		
Yount-Lee Oil Co., School Land 8	*	4510
SULPHUR—		
Union Sulphur Co., Fee 737	1300	3172
TEXAS		
TEXAS GULF COAST		
HULL—		
Republic Prod. Co., Dolbear 27, wo	500	2290
GOOSE CREEK—		
Gulf, Stateland Oil Co., 35	70	2520
PIERCE JUNCTION—		
South Texas Pet. Co., Howe 5, dd	*	5800
Navarro Oil Co., Dooley 10, dd	500	3950
SOUTH LIBERTY—		
Sun Oil Co., Mitchell 24	225	970
Mitchell 27	700	855
Mitchell 28	1000	1070
The Texas Co., Staiti 16	600	1220
EAST CENTRAL TEXAS		
LIMESTONE COUNTY—		
Hicks & Dearing, J. R. Stroud 1	*	4415
TEXAS PANHANDLE		
CARSON COUNTY—		
Magnolia Pet. Co., Fee 6	725	3161
GRAY COUNTY—		
Magnolia Pet. Co., G. H. Saunders 1	105	2820
Plains Drilling Co., G. H. Saunders 2	2825	2556
Pure Oil Co., H. M. Davis 8	125	3282
H. M. Davis 9	230	3161
HUTCHINSON COUNTY—		
Phillips Pet. Co., Johnson-Dugan 1	60	2880
J. A. Whittenburg (Sec. 63) 11	65	2886
MOORE COUNTY—		
Phillips Pet. Co., Sneed-James 3	780	3130
CENTRAL WEST TEXAS		
BROWN COUNTY—		
Amerada Pet. Corp., Guthrie 2	*	728
Caldwell et al, Caldwell 3	4	630
Gore & Brown, Mayes 2	¶¼-5	679
Green et al, Hill 2	10	880
Max Gutzman et al, Stanley 8	15	436
Humble O. & R. Co., Hickman 28	25	1220
Lloyd Oil Co., Collier 13	10	440
Collier 14	*	475
McClung et al, Davis 1	*	740
Mid-Sun Oil Corp. & Brennan, Bull 1	*	1295
Milham Corp., Rosser 7	*	1357
Phillips Pet. Co., DeBusk 1	*	3103
Ramsey et al, Henson 5	*	1440
Riordan et al, Pugh 1	*	1285
Stone, Gilbert et al, Tate 1	*	1421
Venezuela-Mex Pet. Co., Hickman 22	35	1250
Young Bros.-Alexander, Hickman 18	25	1264
CALLAHAN COUNTY—		
Holmes et al, Hickman 3	7	457
Hickman 1-A	*	513
Moutray Oil Co., Hatchett 10	25	358
Stratton et al, Smith 1	*	360
The Texas Co., Hatchett 17	*	397
Maltby 1	*	480
COLEMAN COUNTY—		
American-Maracaibo Co., Anson 1	*	3015
Cunningham et al, Jennings 13-A	75	1156
Roth & Faurot, Terry 2	*	2205

(Continued on page 70)

TRADITION **PROGRESS**

"Here, Lad—

I've been reading a lot about various companies doing great work in developing arc welding.

There'll soon be as many welders on the market as motors."

The Lincoln "Stable-Arc" Welder

— welds easier
— makes better welds
— permits greater output

because of the steady uniform arc throughout entire welding range, which is the result of:

Variable voltage design
Laminated magnetic circuit
Separately-excited generator field
Double control of welding heat
All steel construction

No other welder has all these features.

"Sure, Pop—

on the market — but not on the job.

As you've often told me, Pop, there are two classes of manufacturers. Those working toward the development of an industry and those waiting until an industry is developed and then jumping in — opportunists.

When Lincoln produced the first arc welder the field of arc welding could not be so well discerned as today.

But when it comes to buying a welder, is it good business to buy a newly graduated welder — or to get a veteran welder that is experienced in handling industry's job — like the 'Lincoln'?

In other words, Pop — it's the same reason why the board keeps you as president instead of giving me the job."

The Lincoln Electric Co.
Dept. No. 33-1, Cleveland, O.

W-73

LINCOLN "Stable Arc" WELDER

Company, Well and Location	Initial Production Bbls.	Depth
ERATH COUNTY—		
Snebold & White, Smith 1	¶13	3239
McCULLOCH COUNTY—		
McLean & Jamison, West 3	*	1020
SHACKELFORD COUNTY—		
Big State Oil Co., Jeter 1	*	1309
Earl & Dulls, Matthews 3	600	1144
Ohio-Texas Oil Co., Matthews 11	480	1150
Roeser-Pendleton-Marland, Cook 5-A, (Sec. 83)	100	1382
Tennent et al, Matthews 1	*	1260
STEPHENS COUNTY—		
Pace & Ward, Dixon 1	*	2185
WEST TEXAS		
HOWARD COUNTY—		
Amerada Pet. Corp. & Rycade Oil Corp., Roberts 3	1990	2956
Roberts 4	1800	3014
Dunigan & Hyer, Clay 4	85	1817
Greene O. & R. Co., Clay 3, dd	160	2545
Clay 5	85	1800
Howard County Oil Corp., Kloh 1	†	1005
Fred Hyer & Yates, Clay 2	300	1838
Magnolia Pet. Co., Roberts 12	400	2561
Roberts 17	350	2540
Moody Corp. (Superior), Roberts 8-B	2840	2950
Schermerhorn Oil Co., Roberts 4	2500	3002
JONES COUNTY—		
W. G. Clark et al, Thomas 1	*	2619
Marland Prod. Co., Mason 5	425	2518
Mason 6	255	2508
Phillips Pet. Co., Mason 5	310	2530
Texas Co. & Cosden & Co., Carter 4	10	2521
PECOS COUNTY—		
The California Co., Smith 6, Lse. 1, Sec. 23	2640	1844
Mid-Kansas - Transcontinental, Yates 27-B	50,000	1414
Red Bank Oil Co., Smith 5	300	1855
WINKLER COUNTY—		
Amerada Pet. Corp., Cowden 2	10,000	3075
Humble O. & R. Co., T. G. Hendrick 4-B	25	3029
T. G. Hendrick 2-C, Lse. 2	9500	2902
Prairie O. & G. Co., Cowden 4	21,000	2927
Shell Pet. & Danciger O. & R. Co., Leck-Daugherty 1	1200	3135
Southern Crude & Westbrook, Hendrick 3-S-T-88	2100	2703
NORTH TEXAS		
ARCHER COUNTY—		
American Refining Properties, Benson 1	50	1101
H. Donahoo et al, Andrews 3	*	900
C. W. Gilliland et al, Symank 2	*	1492
L. P. Hammond & Continental Oil Co., Wolfe 1	*	1453
L. V. Hull et al, Andrews 2	*	951
F. Payne et al, Parrish 7	15	1601
Perkins & Cullum, Williams 2	*	589
BURKBURNETT—		
Goldsmith et al, J. E. Roller 1	*	1875
CLAY COUNTY—		
American Refining Properties, Fee 1	*	515
COOKE COUNTY—		
Thornton-Taubert Oil Co., Dennis 2	20	1276
ELECTRA—		
Hammon & Garrett, McCarty 6-D	30	1319
Panhandle Ref. Co. & Harry Hines, Burnett 4	100	1384
K-M-A AND IOWA PARK—		
Continental Oil Co. & Hammond, Munger 2-A	*	1812
Hammon & Garrett, Mitchell 6	90	1638
Holbrook & Wood, K. & K. 28	40	1495
K. & K. 29	150	1496
Regal Oil Co. et al, Martin 2	5	568
Seaboard & Prairie O. & G. Co., Boyd 3	*	1805
Shell Pet. Corp., Denny 3	*	634
Staley-Wynne et al, K. & K. 10	185	1485
United Producers Co., Allen-Kemp 2	120	1492
Hodges 7-A	125	1488
Hodges 8-A	160	1490
MONTAGUE COUNTY—		
Pure Oil Co., Maddox 6-D	40	854
THROCKMORTON COUNTY—		
Humble O. & R. Co., Whitaker 1	*	2052
WILBARGER COUNTY—		
Fain-McGaha Oil Corp., Waggoner 1, dd	160	1922
Waggoner 27-S	500	2462
Waggoner 28-S	400	2450
Waggoner 29-S	600	2439
Waggoner Ref. Co., Waggoner 1-K	50	2447
YOUNG COUNTY—		
Johnston et al, Casey 1	*	875
Nash & Windfohr, Ware 1-B	40	2175
Pennell Oil Co., Johnson 3-D	*	602
Pennell et al, Williams 1	*	650
Riggs et al, Sweet 10	*	570
Wise & Jackson, Calvin 3	10	560

Pondera Activity Not Halted by Winter

Great Falls, Mont.—A check of field operations in Pondera the first of last week showed 80 producing wells, 22 active wells, of which 15 were actually drilling. The Midwest Refining Company hung up somewhat of a record with five completions on its properties, all of which were more than usually good producers, varying from 100 to 200 barrels per day each on initial test. Work in the field is continuing steadily in spite of the winter weather.

South Dakota Well Flows When Shot to Abandon

Casper, Wwo. — Word reaching here concerning the strike in Southwestern South Dakota is to the effect that the old wildcat well, drilled in 1924 and 1925, in the Red Canyon structure, Section 15-8-3e, and standing until recently at 2200 feet, shot oil over the top of the casing when two shots of nitroglycerine were set off in an attempt to loosen the casing so that it might be pulled. The Red Canyon is five miles northeast of Edgemont and about 23 miles southwest of Hot Springs, on land owned by the Cleveland Stone Quarry Company, with an oil lease to Harry Hollingsworth and Arch Nequette of Edgemont. A week after the strike was made it is reported that the casing was standing full of oil which "occasionally slops over." The value of this discovery has not to date been appraised by authority.

Refinery at Cody Delayed for Material

Cody, Wyo.—Progress at the refinery being built by The Texas Company for the crude from Oregon Basin field has been more or less held up recently by inability to get necessary materials. However, it is reported that the plant will be ready to operate within the next six weeks and it is expected that by then development work in the field will speed up materially. Work in the field has been considerably slowed up in the last weeks, and the Ohio Oil Company is reported to have filled all of its storage and to have stopped running oil from the wells. Cody Petroleum Company has experienced some trouble with dehydrators, and for this reason its pipe line runs have decreased. The company recently installed a fifth dehydrator and reports the installation also of a new electric pumping jack, a product of the Jensen Brothers Manufacturing Company.

Ventura Field Has Two Good Completions

Ventura, Cal. — Pacific-Western Oil Company, recent purchaser of the Petroleum Securities Company's holdings in the Ventura field, has completed two exceptional wells on the Orton lease. They were Orton 11, completed at 6950 feet with an initial production of 2400 barrels, and Orton 13, a 3500-barrel producer from 6535 feet. These new wells followed the completion two weeks ago of a small well on the same lease. The cut in both Orton 11 and 13 was higher than the average, but is expected to show the usual reduction.

Petroleum Securities Company is starting a well about 200 yards north of the present producing limits of the field, despite the recent failure of a well on the lease. The company believes that the original test cut sand enough to make a commercial producer and that mechanical troubles prevented a successful production test. The well, which was drilled by the Magenheimer interests, was located only a stone's throw from good producers, but could not obtain a flow from a thick body of sand. It was abandoned below 7000 feet. Completion of a well on this lease would correspond to the southern extension opened up last year by the M. K. and T. Oil Company.

Field production has shown no appreciable increase for several months, and should at least hold its own during the first quarter of this year. About 50 wells are drilling, with new locations keeping pace with completions.

Rincon Production Drops to 3600 Barrels

Ventura, Cal.—Following a disappointing production test, Richfield Oil Company has placed Miley-Hobson 1 on the compressor in an effort to give the Rincon field a creditable deep producer. The well recently flowed at the rate of 200 barrels from 6520 feet, but the oil was much lower in gravity than that produced from the upper sand. After a short time, the well sanded up and otherwise gave evidence that it might not flow consistently. The fact that the well flowed at all holds some importance, however, and there still remains a possibility that a deeper sand may produce satisfactorily. The company's Hobson-Fee 1 is drilling at 6530 feet and will be used as a test of still lower formations.

Production has dropped to 3600 barrels from 26 wells, with little hope of an immediate increase. Estimates of a year ago indicated that the field would be producing at least 12,000 barrels by the first of 1929.

Aside from small showings, outpost wells have offered little promise. The possibility of an extension to the north flank of the structure seemed likely for a time, but the thin streaks of oil sand proved a false alarm. The theory that another structure lies northeast of the proven field has also received little support.

DOWN Where The Going Is Tough

WHERE bits are put to the test, in tough rock formations, where a broken bit means expensive fishing—that's the time and place to appreciate an Agathon Steel Bit.

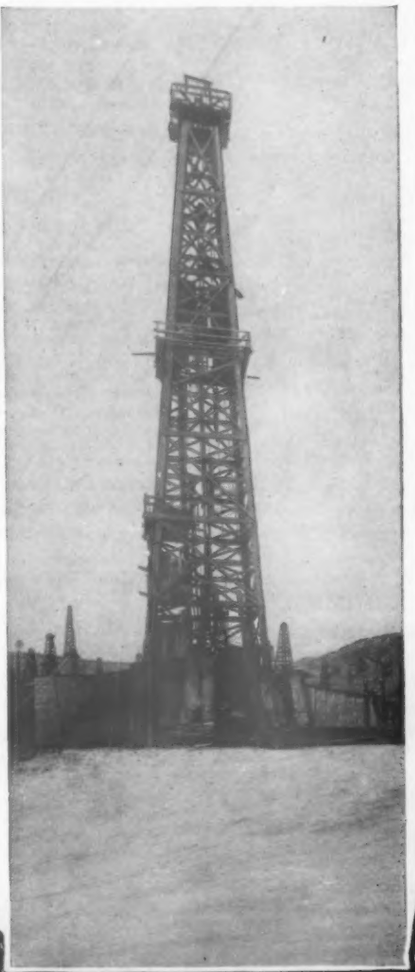
Bits of Agathon Steel go right through the toughest rock for the steel is just the right analysis and is easily tempered to resist abrasion without loss of toughness.

Developed in the laboratories of the world's largest and most highly specialized producers of alloy steels, with an intimate knowledge of the driller's requirements, Agathon Bit Steel holds its gauge longer, makes more hole with fewer dressings and reduces drilling costs.

Our metallurgists are always interested in bit steel problems. If you are encountering unusual conditions or difficulties, tell us about them. We may be able to help you, without cost or obligation on your part.

CENTRAL ALLOY STEEL CORPORATION
MASSILLON, OHIO
World's Largest and Most Highly Specialized Alloy Steel Producers
Makers of Toncan Copper Mo-lyb-den-um Iron
Cleveland Detroit Chicago New York St. Louis
Syracuse Philadelphia Los Angeles Seattle
Cincinnati San Francisco

In drilling their famous Olinda 96 Well, Midway Oil Company used Agathon Steel.



AGATHON ALLOY STEELS

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week ending Jan. 19	Prev. ious Week	Total This Month	Total This Year	This Week Last Yr.	This Month 1928	T'tl to Date 1928	1928 Year Total
Arkansas	3	..	8	8	2	9	9	331
California	20	25	67	67	22	62	62	1,207
Louisiana	21	17	49	49	16	42	42	680
Kansas	21	28	60	60	26	51	51	1,032
Oklahoma	71	54	178	178	44	132	132	3,744
Texas	169	166	430	430	137	309	309	8,297
Total	305	290	792	792	247	605	605	15,291

KANSAS

BUTLER COUNTY—Morgan et al, Henson 1, se nw, 8-26-7e. Allison & Fitzwilliams, Pierce 3, sw ne ne, 28-25-4e.

COWLEY COUNTY—Cameron et al, Zierkel 1, se sw ne, 31-31-3e. Shawver et al, Vaught 1, sw cor, 24-31-3e.

ELK COUNTY—Croft & Hunt, Townlot 1, sw se sw, 10-21-10e. Denton Brothers, Elston 3, nw ne nw, 15-31-10e.

ELLIS COUNTY—Phillips Pet. Co., Dechant 1, ne se, 12-13-16w.

GREENWOOD COUNTY—Phillips Pet. Co., Green 4, sw nw ne, 11-22-10e. Empire O. & R. Co., Edwards 11, sw ne, 21-23-11e.

SEDGWICK COUNTY — Bu-Vi-Bar Pet. Corp., et al, Wilson 1, csl sw, 12-25-1w. Marland, Goodrich 2, nw ne sw, 16-25-1e. W. H. Patton, Valley Center 1, sw nw sw nw, 31-25-1e. Phillips Pet. Co., Dufford 1, nw ne ne, 1-26-1w. Betty Brown Oil Co., Davis 1, nw ne nw, 5-26-1e. Mary Jane Oil Co., Fitch 2, sw ne se sw, 6-26-1e. Tidal Oil Co., Scherger 2, nw sw nw, 6-26-1e. Tidal Oil Co., Scherger 1, se sw nw, 6-26-1e. Jones et al, Brown 1, nw, 6-26-1e. Bu-Vi-Bar Pet. Corp. et al, Emerich 1, cwl se sw, 6-26-1e. Allison & Fitz-Williams, Kelly 1, csl sw nw nw, 6-26-1e. Bu-Vi-Bar Pet. Corp. et al, Branch 1, cel w½ se sw, 6-26-1e.

OKLAHOMA

CARTER COUNTY—Magnolia, Hardin 4, ne sw se, 18-1s-3w. Atlantic, Eason 3, se c 19-1s-3w.

GRADY COUNTY — Meridian Gas Co., Glover 2, se nw ne, 27-5n-8w. Champlin O. & R. Co., Kerns 2, se sw sw, 13-4n-8w.

KAY COUNTY — Tidal Oil Co., Cole 2, (OWDD) c se se, 18-29-1e.

KIOWA COUNTY—G. B. Cloyes, Brizil 1, sw ne, 34-7n-17w. Burke & Son, Copple 1, nw se, 33-6n-17w.

LOGAN COUNTY—Shell, Sebranek 5, nw se ne, 30-19-4w.

MUSKOGEE COUNTY — J. A. Swindler, Jefferson 1, ne se, 7-15-15e. Sikes et al, Jackson 1A, se nw se, 9-15-15e. Gypsy, Sanders 4, (OWDD) nw sw sw, 34-15-18e.

OKFUSKEE COUNTY—F. D. Misner et al, Johnson 2, nw sw ne, 2-10-11e. Atlantic, Simmer 5, se se, 11-10-11e; Micco 2, sw cor, 12-10-11e. Champlin O. & R. Co., Washington 6, sw ne se, 15-11-11e. J. S. Cosden & Co., Barrett 4, nw sw sw, 19-11-11e.

OKLAHOMA COUNTY—I. T. I. O. Co., Button 1, sw cor, 19-11-2w; Button 2, sw nw sw, 19-11-2w. I. T. I. O. Co. et al, Uzzell 1, sw nw, 19-11-2w. T. B. Slick, Huddlestone 1, sw se, 19-11-2w. Sinclair, Stamper 1, nw sw nw, 30-11-2w. Sinclair & Amerada, Foster 1, nw se, 30-11-2w. I. T. I. O. Co., Bodine 1, nw, 30-11-2w; Trosper 2, sw c 13-11-3w; Trosper 3, c se sw, 13-11-3w; Krager 1, ne cor, 23-11-3w. Coline Oil Co., Olds 2, c ne nw, 24-11-3w; Olds 2, nw c 24-11-3w. Ramsey, Fortson 2, c nw ne, 24-11-3w. I. T. I. O. Co., Bodine 2, sw ne se, 24-11-3w; Fortson 1, se ne, 24-11-3w; Henning 1, ne sw se, 24-1-3w. I. T. I. O. & Cromwell O. & G. Co., Johnson 1, ne nw, 25-11-3w. I. T. I. O. Co., Walter 1, ne nw ne, 25-11-3w; Emerson 1, ne c, 25-11-3w.

OKMULGEE COUNTY—Simms Pet. Co., Dunn 7, ne nw ne ne, 21-13-14e.

OSAGE COUNTY—W. C. Elliott No. 1, se ne se, 33-22-11e. Tidal Osage Oil Co., No. 2, sw nw, 4-23-9e. Devonian Oil Co. & Billingslea No. 1, ne nw, 6-23-9e. Continental Oil Co., No. 1, sw se, 31-24-9e.

PONTOTOC COUNTY—Boucher O. & G. Co., Sarkey 1, c sw se, 23-4n-7e. Sunray Oil Corp., South Nitchey 2, se nw ne, 19-5-8e.

POTTAWATOMIE COUNTY — Magnolia, Banta 3, ne se, 14-7-4e; Banta 2, ne se se, 14-7-4e; Rowe 1, nw ne sw, 18-7-5e. Sinclair, Nesbit 5, se ne nw, 18-7-5e; Nesbit 6, ne nw, 18-7-5e. Slick & Maud O. & G. Co., Davis 6, sw ne, 18-7-5e; Davis 5, se nw ne, 18-7-5e. Slick & Magnolia, Rowe 1, ne sw, 18-7-5e. Sinclair, Nesbit 4, sw ne nw, 18-7-5e. Magnolia, Brandenburg 3, se nw nw, 18-7-5e. Skelly Oil Co. & Margay Oil Co., Linger 3, ne nw ne, 18-8-5e. Mid-Continent Pet. Corp., Shelton 2, nw ne ne, 18-8-5e. The Texas Co., Calvin 6, se sw se, 7-8-5e; Calvin 7, sw se se, 7-8-5e.

SEMINOLE COUNTY—Independent O. & G. Co. & Sands Pet. Co., Reed 1, se ne nw, 26-7-6e. Independent O. & G. Co., Carpenter 1, ne cor, 27-7-6e. Carter, Factor 2, sw se nw, 26-7-6e. The Texas Co., Lucy 8, sw se se, 18-5-8e. Magnolia, Thompson 1, nw ne ne, 18-7-6e. Empire O. & R. Co., Sluck 4, nw sw ne, 11-8-5e. Magnolia, Mitchell 1, sw se se, 24-8-5e. Carter, Coker 1, se sw, 2-9-5e. Burke Greis, Mayes 3, ne c, 1-9-5e. Sinclair, Alexander 1, se cor, 36-10-5e. Independent O. & G. Co., Alexander 2, sw c, 31-10-6e.

STEPHENS COUNTY—Sparks, Prince et al, Hedgecox 1, nw ne, 29-2n-5w. Twin State Oil Co., Cole 2, se ne ne, 14-1s-4w. Ridgeway et al, Regan 1, sw se se, 15-2s-6w.

WAGONER COUNTY—Horner et al, Barnett 2, ne sw sw ne, 34-18-17e.

LOUISIANA

ACADIA PARISH—E. F. Simms, Houston, E. Cockrell et al 2, 45-9s-2w, 48 ft n and 180 ft w of sec c. Yount-Lee Oil Co., Beaumont, Crowley Oil & Mineral Co. 4, 48-9s-2w, 1550 ft n and 3220 ft e of sw c.

ASCENSION PARISH—Gulf Ref. Co. of La., Houston, Belle Helene Sugar Co. 1, 27-10s-2e, 100 ft each way out of nw c of Lot No. 17 in Sec. 27.

BOSSIER PARISH—John F. Woodmansee, Milwaukee, Wis., S. H. Bolinger & Co. 1, 9-22n-11w, 250 ft n and 450 ft w of se c ne ne.

CADDO PARISH — Magnolia Pet. Co., Shreveport, Levee Board 4, (Amended Permit), 7-20n-15w, 160 ft s and 330 ft e of nw c ne ne. Shreveport Oil Corp., Shreveport, Chesseur 1, 32-21n-15w, 825 ft e and 300 of ft sw c nw ne; Sample et al 1, 32-21n-15w, Approx 1000 ft n and 150 ft e of sw c nw ne.

CALCASIEU PARISH—Shell Pet. Corp., Houston, Miller Est. 1, 8-10s-9w, 100 ft s and 100 ft w of ne c ne nw.

DE SOTO PARISH—Magnolia Pet. Co., Shreveport, Clements 1, 28-12n-11w, 330 ft s and 330 ft w of center.

MOREHOUSE PARISH—Southern Carbon Co., Monroe, Fee 52, 15-20n-4e, 2132 ft e and 471 ft s of nw c.

OUACHITA PARISH—Hatcher & Evans, Monroe, Hatcher & Evans 8, 21-19n-4e, 590 ft e and 1696 ft s of nw c ne. Le Del Oil Prop., Inc., Monroe, Fee 46, 6-19n-5e, 660 ft s and 600 ft e of nw c nw ne.

PLAQUEMINE PARISH—Gulf Ref. Co. of La., Houston, Morris & Rose 1, 26-21s-30e, 1340 ft e and 1340 ft n of sw c.

RED RIVER PARISH—C. H. Tuttle, East Point, C. H. Tuttle 1, 17-13n-10w, 428 ft n and 200 ft e of sw c ne sw.

RICHLAND PARISH — Carbon Gas Co., Inc., Monroe, McCoy 1, 8-16n-6e, 3168 ft s and 660 ft e of nw c; Roberts 1, 21-16n-6e, 660 ft s and 1980 ft e of center; Sartor 1, 16-16n-6e, 1980 ft n and 660 ft w of se c sw; Sartor 2, 16-16n-6e, 1980 ft n and 1980 ft w of se c sw.

ST. MARTIN PARISH—Yount-Lee Oil Co., Beaumont, La. Pet. Co. 4, 86-9s-5e, 310 ft n and 770 ft w of sec.

TERREBONNE PARISH—The Texas Co., Shreveport, Bay Coon Road B-1, 17-22s-18e, 875 ft s and 250 ft e of nw cor of Sec in Bay Coon Road in Sec 17.

UNION PARISH—Industrial Gas Co., Bastrop, Mrs. M. E. Hill 3, 9-20n-3e, 2638 ft w and 1320 ft s of center.

WEBSTER PARISH—John F. Woodmansee, Milwaukee, Wis., M. V. Boyd 1, 3-22n-11w, 200 ft s and 200 ft e of nw c se sw.

ARKANSAS

DREW COUNTY — Ohio Oil Co., Jerome Hardwood Lbr. Co. 1, se nw, 13-15-4.

OUACHITA COUNTY—Sam S. Klar, Langley 1, se sw 19-15-15.

UNION COUNTY—Olvey, Tarver & Jones, A. B. Cook 6. nw nw, 16-16-15.

CALIFORNIA

BELRIDGE—Berry Oil Co., No. 96, 30-28-21.

EIWOOD—R. Hector McIntosh, Scot McIntosh 1, 24-4-29.

KERN COUNTY—Mohawk Pet. Co., 3, 27-29-27.

LONG BEACH—Dabney-Johnston Oil Corp. 27, 24-4-13; 28, 24-4-13; 29, 24-4-13.

LAWNDALE—Golconda Pet. Corp., 1, 16-3-14. "We" Syndicate, No. 2, 16-3-14. Union Oil Co., Root 1, 16-3-14.

MIDWAY—Standard Oil Co., 60, 8-32-24; Mascot 1, 26-33-23. North American Oil Cons., 23, 2-32-23; 37, 30-31-24; 20, 32-31-24.

PIRU—Bolsa Chica Oil Corp., Snow 1, 4-4-18.

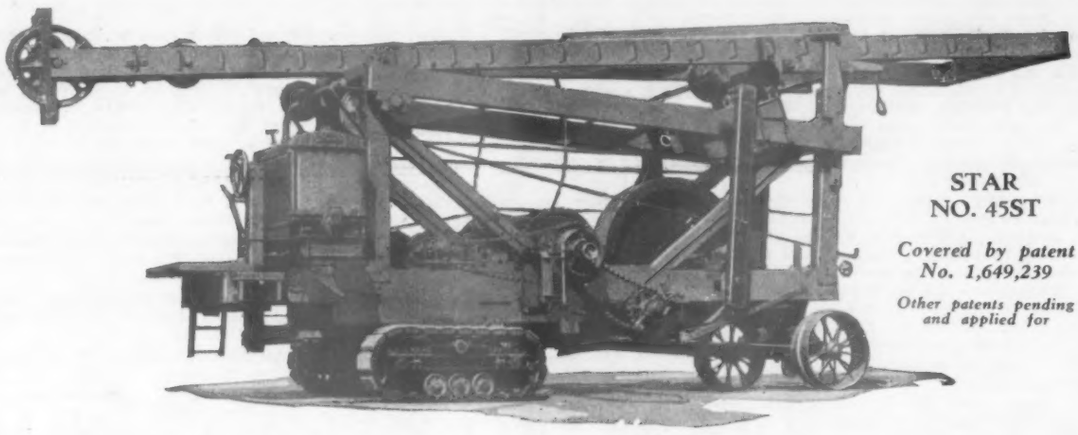
RICHFIELD—Continental Oil Co., Winann 2, 33-3-9; Stnta Fe 1, 33-3-9. Superior Oil Co., Richfield Fee 1, 33-3-9.

ROSECRANS—Union Oil Co., Rosecrans 12, 18-3-13.

SANTA FE SPRINGS—Wilshire Oil Co., Inc., Wilshire-Baker 4A, 6-3-11. Bell View Oil Syn., Santa Fe 3, 6-3-11. Union Oil Co., Howard 13, 31-2-11.

TEXAS

ARCHER COUNTY—J. H. Turner, Wichita Falls, Lyles 4, S 7, Hooper & Wade sur, 300 ft w of No. 3. Kelleher & Rodgers, Wichita Falls, King 1, 2422, TE&L sur, 150 ft w of center of e line. T. W. Puckett, Wichita Falls, Williams 3, J. Hand sur, 1350 ft from e and 150 ft from s line. Panhandle Ref. Co., Wichita Falls, Prideaux 12C, A. Rohus sur, 300 ft w of No. 11; Daugherty 1A, I. Hughson sur (Jack Co.), 1827 ft from e and 300 ft from s line. L. T. Burns, Wichita Falls, Engle 1, J. W. Harris sur, 783 ft from s and 175 ft from w line. American Ref. Properties and Corlett & White, Wichita Falls, Cernosek 6, 2409, TE&L sur, 450 ft w of No. 2. Prairie O. & G. Co.,



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Ranger, Boyd 3, J. T. Lewis sur, 150 ft from n and w lines; Richardson B25, S.A.R. sur, 300 ft e of No. 24. Freeman & Grebin, Wichita Falls, Henning 2, G. P. Meade sur, 340 ft s of No. 1. Perkins & Cullum, Wichita Falls, Williams 3, Hand sur, 150 ft from s and 750 ft from e line. W. C. Young, Archer City, Young & Langford, 1, S 135, Club Ranch sur, 150 ft from s and 1490 ft from e line.

AUSTIN COUNTY—Humble Oil & Ref. Co., Houston, Deutrich 2, W. C. White sur, center; Sherrill 1, same sur, 650 ft from ne and 400 ft from se line; Thompson 3, same sur, 650 ft from ne and 540 ft from nw line; Kearns 2, same sur, 300 ft from s and 500 ft from e line; Wilson 1, Wm. Harvey sur, 410 ft from n and 712 ft from w line; Wilson Jr., 1, M. R. Williams sur, 915 ft from e and 488 ft from s line.

BROWN COUNTY—Syndicate Oil Corp., 1827 Pine St., Albany, Curry 4, E. L. Betts sur, 510 ft from n and 200 ft from w line. Mac T. Anderson, Rising Star, Newton 1, B 2, N. B. Mitchell sur No. 150, 150 ft from s and w lines. A. D. Bruce, Brownwood, Shield 1, J. C. Brown sur, 150 ft w of center of e line. Glenn & McLaughlin, San Angelo, Dixon 1, Wm. Harrell sur, 1500 ft from ne and 150 ft from se line. Lloyd Oil Corp., Fort Worth, Collier 15, S 139, W. A. Smith sur, 300 ft s of No. 9. Prairie O. & G. Co., Ranger, Armstrong 4, H&GN No. 1 sur, 450 ft from s and w lines; Reaves 1, S 623, T. Bellknap sur, 150 ft from n and 1226 ft from e line. Hammon, Heyser & Garrett, Wichita Falls, Boysen B2, S 7, E. T. Ry sur, 450 ft from n and 300 ft from e line. J. D. Burns et al, Cross Plains, Newton 11, P. Curlong sur, 300 ft no of No. 10.

BURNET COUNTY—E. Croft, Waco, Alexander 1, T. J. Irwin sur, 150 ft from s and e lines.

CALLAHAN COUNTY—Grassroots Oil Co., Fort Worth, Klutts 7, S 181, C.C.S.L. sur, 150 ft from n and 570 ft from e line. J. M. L. Smith et al, Cisco, Bayland 1, S 5, Bayland Asy sur, 1170 ft from n and 150 ft from w line. Rover Drilling Corp. & Mortimer, Cisco, Hood 4, S 29, D. & D. Asy sur, 150 ft from n and 750 ft from w line. Grassroots Oil Co., Fort Worth, Klutz 6, S 181, C.C.S.L. sur, 150 ft from n and 870 ft from e line. Reiter-Foster Oil Corp., Tulsa, Okla., Hatchett 20, S 24, D. & D. Asy sur, 450 ft from e and 923 ft from s line.Reiter-Wittmer O. & G. Co., Pittsburgh, Penna., Williams 1, No. 1 sur, 1800 ft from n and 1200 ft from w line. Moutray Oil Co., Abilene, Hatchett 10, S 29, D. & D. Asy sur, 300 ft n of No. 9. C. B. Holmes et al, Baird, Hatchett 1, S 31, D. & D. Asy sur, 750 ft from w and 150 ft from s line. Texas Co., Wichita Falls, Hatchett 17, S 39, D. & D. Asy sur, 290 ft w of No. 16.

COLEMAN COUNTY—F. P. Zoch, San Antonio, White 1, S 183, W. N. Clayton sur, 150 ft from s and w lines. White Eagle O. & R. Co., Abilene, Eddington 1, No. 187, V.C.S.L. sur, 327 ft from s and w lines. Shell Pet. Corp., St. Louis, Mo., Newsome 1, P. Cochran sur, 150 ft from n and w lines. Midland Oil Co. et al, Fort Worth, Curry 1, No. 631, H. Rhodes sur, 2003 ft from e and 150 ft from n line. Jno. R. Foster et al, Coleman, Haas 1, S 71, B 1, GH&H sur, 150 ft from n and w lines. Midland Oil Co., Fort Worth, Curry 1, No. 631, H. R. Rhodes sur, 2003 ft from e and and 150 ft from n line.

CALDWELL COUNTY—Humble, Houston, Allen 1, G. Hinds sur, 160 ft from s and w lines; Wm. Smith 4, same sur, 450 ft from e and 150 ft from n line. Gulf, Houston, Conley 7, A. Floyd sur, Turma. Turman & Brown, Fort Worth, Beversdorff 1, A. Floyd sur, 150 ft from se and 131 ft from sw line. Humble, Houston, J. J. Davis 2, A. Floyd sur, 158 ft from s and 145 ft from w line; Tiller 4, G. Hinds sur, 433 ft from n and 150 ft from w line.

CARSON COUNTY — Champlin Ref. Co., Enid, Okla., McConnell 2, S 67, B 4, I&GN sur, 330 ft from n and e lines. Prairie O. & G. Co., Ranger, McMarland 3, S 67, B 4, I&GN sur, 330 ft from n and w lines. Delmar Oil Co., Bartlesville, Okla., Noel 3, S 298, B 3, I&GN sur, 330 ft from e and 1650 ft from s line.

CLAY COUNTY — Mid-Continent Holding Corp., Wichita Falls, Stine 1, B 7, P.C.S.L. sur, 150 ft from w and 163 ft from s line. Lone Star Gas Co., Dallas, Holloway 27, B 18, P.C. S.L sur, 150 ft from n and w lines.

COOKE COUNTY—Kewanee O. & G. Co., Tulsa, Okla., Lanier 6, E.T. Ry sur, 300 ft s of No. 1. Westheimer & Daube, Ardmore, Okla., Cox 1, 150 ft from s and w lines.

CRANE COUNTY—Duffey and Texas Dev. Co., Fort Worth, Cowden 4, S 18, B X, CCSD &RGNG sur, 200 ft from e and 1320 ft from s line.

CORYELL COUNTY — Conley & Adams, Jonesboro, Voss 1, A. Gray sur, 600 ft s of center of n line.

COLORADO COUNTY—Shell Pet. Corp., Houston, Neuendorff 1, J. Brod sur, 500 ft from e and 200 ft from s line.

DUVAL COUNTY—S. & O. Oil Co., Corpus Christi, Dowe 2, S 250, B 21, Rosita Balley sur, 315 ft n of No. 1.

ERATH COUNTY—Hickory O. & G. Co. and Worth Pet. Co., Fort Worth, Gordon 1, J. M. Espinosa sur, 701 ft from n and 388 ft from e line; Mauldin 1, same sur, 934 ft e and 500 ft from s line.

EASTLAND COUNTY—Texas Pacific Coal & Oil Co., Fort Worth, Fee 5, R.C.S.L sur. Belva Oil Co., Eastland, Good 6, J. R. Stubblefield sur, 651 ft s of No. 3. Chestnutt & Smith et al, Breckenridge, Thorpe 1, S 456, S. P. Ry sur, 525 ft from n and 1040 ft from w line. Moore & Lewis et al, Eastland, Lyerla 2, S 27, B 2, H&TC sur, 340 ft s of No. 1.

FORT BEND COUNTY—Humble, Houston, Brazos 2, Wm. Little sur, 182 ft e of center of w line; 3, same sur, 165 ft from s and 150 ft from e line; 4, same sur, 150 ft e of center of w line. Sun Oil Co., Beaumont, Rodgers 2, S. Miller sur, sw of No. 1.

FISHER COUNTY—Cranfill & Reynolds, Cisco, Fleming 1, S 207, B 1, BBB&C sur, 330 ft from e and 660 ft from s line; Willingham 2, S 207, B 1, BBB&C sur, 330 ft from w and 660 ft from s line.

GRAY COUNTY — Midwest Explo. Co., Amarillo, Taylor 1, S 22, B 2, H&GN sur, 1320 ft from n and w lines. Barnsdall Oil Co., Tulsa, Okla., Davis 1, S 9, B 1, ACH&B sur, 330 ft from n and w lines.

GONZALES COUNTY—Cranfill & Reynolds, Cisco, Webb 1, W. A. Matthews sur, 150 ft from n and e lines. Texas Co., Houston, Lamkin 1, W. Turner sur, 800 ft from nw and 200 ft from sw line.

GOLIAD COUNTY — Booth & McCarson, Goliad, Murry 1, B 11, Rge 3, Goliad sur, 450 ft from n and 300 ft from w line.

HARDIN COUNTY—East Batson Oil Co., Batson, Stateland 17, Copley sur, 45 ft from n and 25 ft from w line. B. O. Poole, Batson, Paraffine 1, C. Choate sur, 45 ft from n and 66 ft from w line. Acorn Oil Co., Beaumont, Paraffine 69, Blk 7, Knight sur, 35 ft from e and 370 ft from s line. E. W. Skinner Oil Co., Saratoga, Kirby 15, B 5, BBB&C sur, 20 ft from s and w lines.

HOWARD COUNTY—Cosden & Co., Inc., Fort Worth, Roberts 1C, S 128, B 29, W&NW sur, 330 ft from s and w lines; 2C, same sur, 330 ft from w and 200 ft from s line; 2D, S 157, B 29, same sur, 330 ft from n and 990 ft from e line. Pure Oil Co., Fort Worth, Chalk 10, S 125, B 29, W&NW sur, 660 ft e of No. 8. Shell Pet. Corp., McCamey, Settles 1, S 135, B 29, W&NW sur, 330 ft from s and e lines. Schermerhorn Oil Co., Tulsa, Okla., Roberts 4, S 137, B 29, W&NW sur, 370 ft from s line. Merrick & Bristow, Ardmore, Okla., Hooks 10, S 140, B 29, W&NW sur, 660 ft from n and 200 ft from e line.

HUTCHINSON COUNTY — Alamesa Oil Co., Amarillo, Sanford 3, S 83, B 4, H&TC sur, 330 ft from w and 350 ft from s line.

IRION COUNTY — Sun Oil Co., Dallas, Tankersley 1, S 8, GC&SF sur, 173 ft from w and 2128 ft from s line.

JACK COUNTY—Bryson O. & G. Co., San Angelo, Dougherty 1, C. E. Leffel sur, ne corner. Panhandle Ref. Co., Wichita Falls, Daugherty 1A, I. Hughson sur, 1827 ft from e and 300 ft from w line; Smith 2, same sur, 810 ft from n and 330 ft from w line. Texas Co., Wichita Falls, Bryson 1, I. Hugson sur, 330 ft from s and w lines; Jones 2. L. Knight sur, 330 ft from n and w lines. Shappell Oil Co., Wichita Falls, Younger 1, B 19, W.C.S.L. sur, se corner.

JONES COUNTY—Cosden & Co., Inc. and Herbert Oil Co., Fort Worth, Bickley 6, S 50, B 18, T&P sur, 330 ft from n and 320 ft from w line. Phillips Pet. Co., Bartlesville, Okla., Mason 6, S 18, B 19, T&P sur, 330 ft from n and e lines.

LIBERTY COUNTY—Gulf Prod. Co., Houston, Phillips 25, C. Underton sur, 1800 ft from s and 600 ft from w line; McLean 5, M. G. White sur, 150 ft n of No. 4; 6, 275 ft from s and 200 ft from e line. Sun Oil Co., Beaumont, Mitchell 32, M. G. White sur, 150 ft n of No. 30; 33, 150 ft n of No. 31; 34, 125 ft n of No. 32; 35, 150 ft n of No. 33. Texas Co., Houston, Staiti 18, M. G. White sur, 100 ft e of No. 16.

LAMPASAS COUNTY — E. Croft, Waco, Pierce 1, B. F. Klein sur, 150 ft from ne and 1100 ft from s line.

LIMESTONE COUNTY—Riverland Oil Co., Tulsa, Okla., Handcock 1, R. Scott sur, 150 ft from s and e lines.

MILAM COUNTY—Texas Pet. Dev. Co., Cameron, Niehaus 15, T. J. Chambers sur, 300 ft se of No. 14.

MONTAGUE COUNTY—Pure Oil Co., Fort Worth, Maddox 7, J. Chambliss sur, 450 ft n of No. 6. Humble, Wichita Falls, Cunningham 2, L. Norton sur.

NUECES COUNTY—Agua Dulce Oil Co., Agua Dulce, Sander 1, S 35, Benton sur, 660 ft from ne and e lines.

PANOLA COUNTY—Natural Gas Prod. Co., Shreveport, La., Roquemore 8, B. C. Jordan sur.

PALO PINTO COUNTY—T. G. Shaw, Fort Worth, Chestnut 1, S 40, B 5, T&P sur, 1200 ft from n and 2240 ft from w line.

PECOS COUNTY—Shell Pet. Co., McCamey, Smith 1, S 2, B 194, GC&SF sur, 990 ft from w and 2330 ft from s line. Phillips Pet. Corp., Bartlesville, Okla., Ramsey 1, S 17, B 194, GC&SF sur, 990 ft from n and e lines.

REFUGIO COUNTY—Mission Drilling Co., San Antonio, Cummings 1, Refugio sur, 150 ft from n and w lines; Rodgers 1A, J. Powers sur, 233 ft from e and 606 ft from s line; Rodgers 1, same sur, 150 ft from s and w lines.

SHACKLEFORD COUNTY — Roeser & Pendleton, Inc., Fort Worth, Cook B10, S 61, E.T. Ry sur, 377 ft w of No. 6; Cook A87, S 60, E.T. Ry sur, 524 ft w of No. 83; Cook A6, S 83, E.T. Ry sur, 415 ft w of No. 2. Roeser & Pendleton and Marland Oil Co., Albany, Cook 7, S 83, E.T. Ry sur, 415 ft w of No. 3; Cook 1, S 88, E.T. Ry sur, 230 ft from n and 660 ft from e line. L. B. Tannehill, Albany, Mathews 11, S 58, E.T. Ry sur, 300 ft from w and 750 ft from s line; Alexander 9, 150 ft from s and e lines; Alexander 1, S 6, L.A.L sur, 150 ft from s and w lines.

STEPHENS COUNTY—Mid-Texas Pet. Co., Eliasville, Cunningham 8, 1210, TE&L sur, 350 ft from nw and 550 ft from sw line. O. F. Striplin, Breckenridge, Redwine 1, S 38, B 6, T&P sur, 450 ft from n and w lines. Amerada Pet. Corp., Cisco, Patton 2, B. J. McGaha sur, 2000 ft from s and e lines.

TAYLOR COUNTY—Grisham-Hunter Corp., Abilene, Campbell 1, S 65, B 19, T&P sur, 330 ft from n and w lines.

THROCKMORTON COUNTY—Lewis Prod. Co., Dallas, Matthews 2, S 231, E.T. Ry sur, 325 ft e of No. 1. H. I. Stock, Cisco, Kelly 3, S 3, C.I.R. sur, 750 ft from n and 160 ft from w line.

WICHITA COUNTY—S. H. Walton, Jr., Wichita Falls, Honaker 1, DI&C sur, 150 ft from n and w lines. Humble O. & R. Co., Wichita Falls, Taylor 10, S 81, W.V.F.L. sur, 300 ft w of No. 7. United Prod. Co., Wichita Falls, Hodges 9A, H&TB sur, 300 ft e of No. 8. Ryan Consolidated Pet. Corp., Bartlesville, Okla., Nance 107, S. O. Fowler sur, 358 ft n of No. 103.

WILBARGER COUNTY—Fain-McGaha Oil Corp., Wichita Falls, Waggoner 32, S 24, B 4, H&TC sur, 685 ft from w and 175 ft from n line; Waggoner 2, S 32, B 4, H&TC sur, 150 ft from s and 450 ft from w line. Wilbarger Oil Co., Wichita Falls, Waggoner 1, S 55, B 4, H&TC sur, 150 ft from s and e lines. Phillips Pet. Corp., Bartlesville, Okla., Waggoner 8, S 47, B 2, H&TC sur, 330 ft from n and w lines; Waggoner 3, S 5, B 5, H&TC sur, 340 ft e of No. 2. Shaw Oil Co., Wichita Falls, Waggoner 3, S 18, B 4, H&TC sur, 343 ft ne of No. 1. Lewis Prod. Co., Dallas, Waggoner 1 S 8, B 4, H&TC sur, 660 ft from n and 200 ft from e line. C. P. Burton, Wichita Falls, Waggoner H1, T. D. Purnell sur, 150 ft from s and w lines. Phillips Pet. Corp., Bartlesville, Okla., Waggoner 2, S 44, B 4, H&TC sur, 300 ft from w and 467 ft from s line; Waggoner 1, S 43, B 4, H&TC sur, 330 ft from w and 667 ft from s line. R. R. Robertson, Wichita Falls,

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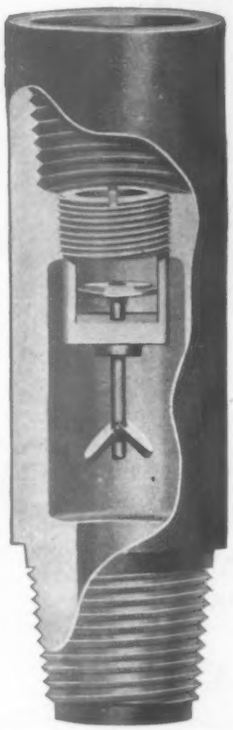

Notice the large aperture in the cage of the valve assembly. This means easy by-pass of fluid because it reduces back pressure on the hose, piston rubbers and liner packing—hence less steam is needed in getting the fluid to the contact points.

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American Forged Steel Subs
American Rotary Shoes
American Cone Fishing Baskets
American Steam Lubricators
American Side Tracking Mills
American Combination Reverse and Throttle Levers
American Rock Bit Lubricator Wash Pipe Attachments
American Rotary Milling Tools
American Myracle Sucker Rod Sockets
American Surface Bit Blades for Rock Bits
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American Pump Manifold Check Valves
American Casing Suspension and Blowout Preventer
American Lead Plug
American Rock Bit Cone Fishing Sockets

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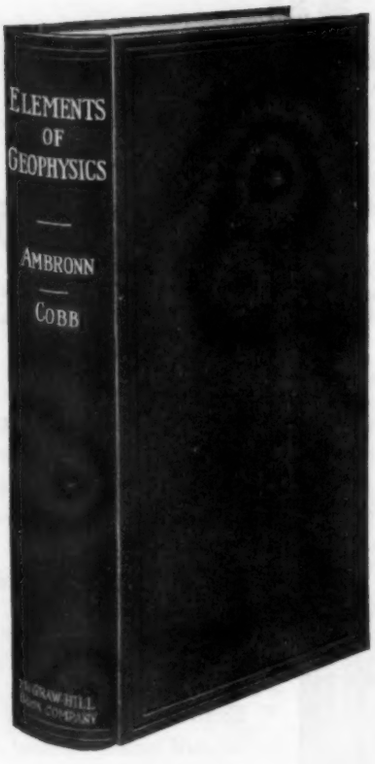

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Waggoner 2, T. D. Purnell sur, 300 ft e of No. 1.

WARD COUNTY—Atlantic and Delmar Oil Co., Dallas, Hazzlett 1, S 17, B 5, H&TC sur, 2490 ft from sw and se line.

WINKLER COUNTY—Independent O. & G. Co., Fort Worth, Russell 1, S 27, B 12, 300 ft from s and e lines. Dixie and Southern Crude Oil Pur. Co., Shreveport, La., Hendrick D6, S 4, B12, 1320 ft from e and 440 ft from S 1 Sec. 4.

WEBB COUNTY — Cole Pet. Co., Laredo, Benavides 67, S 412, Blk 4, 320 ft e of No. 66.

WASHINGTON COUNTY — Sun Oil Co., Beaumont, Grote 3, N. Clay sur.

YOUNG COUNTY—W. B. Fultz et al, Graham, Scott 1, Wm. Johnson sur, 250 ft from e and 200 ft from s line. Carter & Ruff, Wichita Falls, Gragg 1, A. Rohus sur, 1050 ft from n and 150 ft from w line. W. R. Stafford, Graham, Miller 1, 3404, TE&L sur, 150 ft from s and e lines. R. R. Rhodes et al, Graham, Eichelberger 1, 1449, TE&L sur, 150 ft from n and 1550 ft from e line. C. A. Pennell, Loving, Johnson 4, E. W. Sargent sur, 150 ft from s and w lines. Holbrook & Woods, Wichita Falls, Watson 3, S 22, Y.C.S.L. sur, 300 ft w of No. 2. Fain-McGaha Oil Corp., Wichita Falls, Campbell 2, S 1375, TE&L sur, 150 ft from n and w lines. R. P. Dorian, Wichita Falls, Johnson 3, E. W. Sargent sur, 300 ft w of No. 1. Steed & Gans, Wichita Falls, Snider 11, Wilson sur, 350 ft se of No. 8. C. A. Pennell et al, Loving, Williams 1, W. C. Adams sur, 150 ft from n and 450 ft from w line. Senior Oil Corp. and Riggs & Oliphant, Graham, Sweet 10, 1488, TE&L sur, 450 ft from n and 550 ft ft from w line. Wise & Jackson, Graham, Calvin 3, A. Rohus sur, 300 ft s of No. 2. Continental and Underwood Drilling Co., Wichita Falls, Campbell 5, 1390, TE&L sur, 945 ft from e and 850 ft from s line.

ZAPATA COUNTY — Jno. Pappas, Laredo, Cuellar 1, por. 33, Blk. 5, 333 ft from ne and 194 ft from se line. Texas State Oil Co., San Antonio, Benavides 1, S 12, B 1, P. Benavides sur, nw corner.

Further Decline Shown In Tampico Production

Washington, D. C.—A final report of the Mexican petroleum situation for the year 1927, reveals that the output of the Tampico area showed another sharp decline during that year. The downward tendency which became evident in 1925 and 1926 was further accentuated in 1927 when total output declined to 61,353,480 barrels, a decrease of nearly 28,000,000 barrels from the preceding year. It has been estimated that the total production for 1928 will show another decline of at least 12,000,000 barrels. Of the total exports of Mexican petroleum and its products for the year 1927, amounting to 54,396,358 barrels, American companies exported 40,392,148 barrels.

New Record For Russian Oil Exports

Washington, D. C.—"L'Humanite" the quasi-official organ of the Soviet in France, carries a dispatch from Moscow, Russia, stating that the exports of petroleum in 1927-28 broke all records with 2,684,000 tons, 34 per cent. more than the preceding year and 148 per cent. more than in 1904, the pre-war record year. The largest consignments went to Italy, followed by Great Britain and France. Soviet petroleum now supplies one-half of the Spanish demand.

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THE outstanding advantage of the Larkin Improved Sand Pump is its flexibility—in that it operates successfully at all depths, under all conditions. Under normal conditions it will bring out the sand and sediment in record time—equipped with the Regular Bottom.

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This Leader of the Larkin Line will clean out your wells quickly, thoroughly; it will last through years of hard service. Even more than when the Eastern fields were young, it is the most efficient sand pump on the market.

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These extra fine bottoms give the LARKIN pumps real advantages

Regular Bottom

In the Larkin Regular Bottom, the legs are short, allowing the pump to rest as near the bottom of the hole as possible and still obtain the necessary suction to remove the greatest amount of sand and sediment quickly.

Bit Bottom

This Bottom is used for drilling and breaking the sand loose. Its chisel shaped design is unique, prevents sticking, and allows successful operation in tightly packed sands.

WILDCATS FROM ALL SECTIONS

WEST TEXAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
JONES COUNTY—		
Woods-Williams et al, Parr 1	*	2502
STONEWALL COUNTY—		
Sun Oil Co. et al, Rayner 1	*	3618
SUTTON COUNTY—		
Phillips Pet. Co., Cawthorn 1	*	975

ANDREWS COUNTY—Deep Rock Oil Co.'s Hostetter 1, elev 3224 ft, top salt 1890 ft, dr 1995 ft. Mid-Continent Pet. Corp.'s Fisher 1, lcn.

BORDEN COUNTY — Condor Pet. Co.'s Hall 1, elev 2601 ft, top salt 1235 ft, top lime 2969 ft, sd 3805 ft. Greene O. & R. Co.'s Slaughter 1, spudding.

BREWSTER COUNTY—Ed. W. Bateman & Co.'s Neville 1, elev 3950 ft, dr 1210 ft. Brewster Oil Co.'s Fee 1, spudded and sd. C. Williams et al's Poncey 1, sd 500 ft.

COKE COUNTY—Gates & Dennis' Mims 1, sd 1465 ft. Lipan Oil Co.'s Rawlings 1, sd 2840 ft. Louisiana Oil Ref. Corp.'s Powers 1, elev 2040 ft, dr 3590 ft. Mid-Kansas O. & G. Co.'s Lackey 1, set 8-inch cas 2887 ft.

CONCHO COUNTY — Lloyd Jones et al's Jones 1, sd 660 ft. Exploration Co.'s Hartgrove 2, rig. Duffey & Silk's T. Y. Hill 1, dr 755 ft; Lovelace-Lockett 1, sd 650 ft; J. A. Noyes 1, lcn.

CRANE COUNTY — C. C. Duffey et al's Cowden 4, dr 715 ft. Gulf's Waddell 6, ur 737 ft.

CROCKETT COUNTY—Barbara Oil Co.'s Cox 1, elev 2051 ft, top lime 1082 ft, sd 1290 ft. W. W. Donnelly et al's Shannon 1, (Sec. 9), elev 2486 ft, sd making gas, td 1759 ft. Donnelly-W. A. Moncrief et al's Todd 1, (Sec. 35), spudded and sd; Todd 2, lcn. Ed. G. Lewis & W. T. Daniels' Pecos River Bed 1, spudded and sd. J. D. Wheeler et al's State Fee 1, sd 410 ft.

CULBERSON COUNTY — Deep Rock Oil Co. et al's Seay 2, dr 1430 ft. West Texas Oil & Exploration Co.'s McGregor 1, dr 505 ft.

JEFF DAVIS COUNTY—Sam F. Means et al's J. Z. Means 1, dr red sand 3355 ft.

DAWSON COUNTY—Magnolia Pet. Co.'s Jeter 1, elev 2889 ft, top salt 1640 ft, top lime 3560 ft, trace oil 3860 ft, dr 3965 ft.

EDWARDS COUNTY — McMan O. & G. Co.'s Schreiner 1, fsh 3995 ft.

EL PASO COUNTY—C. E. Sillix et al's Malone 1, sd 1010 ft.

FISHER COUNTY—Bickerstaff et al's McWhirter 1, sd 2000 ft. Cranfill-Reynolds-Sun Oil Co.'s Brown 1, set cas 1230 ft; Fleming 1, rig; B. F. Willingham 2, rig. Culberson Bros. et al's A. J. Griffin 1, rig. J. B. Dunigan et al's Henry 1, sd 1475 ft. Hucony Gas Co.'s Marberry 1, elev 1876 ft, top lime 2960 ft, testing show oil and water 2964-70 ft. Londreth Prod. Corp.'s Cooper 1, spudding. Rainey et al's Marberry 2, sd 3507 ft. I. E. Thompson-Greenwood et al's Newman 1, elev 1882 ft, dr 2490 ft. Texas Co. & Phillips Pet. Co.'s Hail 1, lcn.

GAINES COUNTY — Pure Oil Co.'s Williams 1, sd 2551 ft.

GARZA COUNTY—Emerald Oil Co.'s J. M. Boren 3, sd 4801 ft; Boren 4, rig.

GLASSCOCK COUNTY — Chas. Daniel et al's Meek 1, dk. Gibson-Johnson et al's Mann 1, sd 1050 ft. Meriwether Oil Co.'s McDowell 2, elev 2517 ft, top salt 970 ft, dr 2680 ft. Bob Penn et al's Hughes 1, elev 2733 ft, dr 630 ft. White Eagle O. & R. Co.'s Dunbar 1, top salt 1140 ft, dr 1685 ft. World Oil Co.'s McDowell 1-C, elev 2530 ft, dr 280 ft.

TOM GREEN COUNTY—F. P. Green et al's Fee 1, set cas 1810 ft.

HOWARD COUNTY—Andrews et al's Neal 1, elev 2731 ft, top salt 2015 ft, top lime 3150 ft, sd 3750 ft. Greene O. & R. Co.'s Furrh 1, elev 2277 ft, top salt 1255 ft, top lime 2097 ft, sd 3503 ft. L. C. Harrison et al's Dodge 1, elev 2321 ft, top lime 1830 ft, pb from 3257 to 3000 ft for shot. Phillips Pet. Co.'s Thomas 1, elev 2591 ft, top salt 1170 ft, top lime 3030 ft, dr hfw 3715 ft.

HUDSPETH COUNTY — The California Co.'s University 1, elev 5833 ft, bad hole 305 ft. Western States Oil Co.'s Gardner-Mosely 1, sd 3155 ft; Moore 1, sd 2760 ft.

IRION COUNTY — Fuhrman Pet. Corp.'s Sugg 1, rig. Kimbrough et al's Nutt 1, sd 1420 ft. Kimbrough & Flinchbaugh's Tankersley 1, spudded and sd. Kingwood Oil Co.'s Sugg 1, elev 2334 ft, dr black lime 5170 ft. Mertzon Interests' H. Horney 1, dr 1120 ft. Signal Oil Co.'s Sugg 2, rig. Sun Oil Co.'s F. Tankersley 1, rig. Webb et al's Nutt 1, sd 2510 ft.

JONES COUNTY—Culberson Bros. et al's Mrs. H. H. Anderson 1, lcn. E. P. Campbell et al's Herndon 2, dr 1245 ft. McNeeley et al's Bland 1, spudded and sd. Mid-Sun Oil Corp.'s Hoehn 1, dr 1980 ft. Milt Richardson et al's Martin 1, dr 1055 ft. Roeser-Pendleton et al's Castle 1, dr 815 ft. Sedgwick O. & G. Co.'s Routh 1, rig. Tomberlin et al's Horn 1, spudded and sd.

KING COUNTY — Huff Oil Co.'s M. A. Martin 1, rig.

LOVING COUNTY—Lockhart & Co.'s H. L. Lepp 1, sd 578 ft.

LYNN COUNTY—Geo. B. McCamey et al's Edwards 1, sd 510 ft. H. F. Miller et al's W. H. May 1, spudded and sd.

MENARD COUNTY—Sorrells & Jackson's Wilhelm 1, dr 1155 ft.

MIDLAND COUNTY—Shoup et al's Parks 1, elev 2871 ft, top salt 1740 ft, sd 4951 ft.

MITCHELL COUNTY—E. P. Campbell et al's Pond 1, dr 2380 ft. Simms Oil Co.'s Ellwood 1, dk. Teas & Wheeler's Radford 1, elev 2223 ft, top lime 1365 ft, dr 3330 ft.

NOLAN COUNTY—T. G. Bradstreet et al's Kuteman 1, dk. Herbert Oil Co.'s Pepper 1, elev 2242 ft, sd 3645 ft. C. M. Root Drlg. Co.'s Simpson 1, dr 2135 ft. White Eagle O. & R. Co.'s Allyn 1, elev 2158 ft, sd 2485 ft.

PECOS COUNTY—Alexander-Lyles et al's Sellman 1, elev 2672 ft, top salt 814 ft, top lime 1602 ft, sd hfw and show oil-gas, td 1655 ft. Geo. H. Anderson et al's University 1, elev 2801 ft, top salt 1030 ft, top lime 1760 ft, spraying water with show oil, td 1998 ft & pb to gas pay. Atlantic Oil Prod. Co.'s Sellman 1, elev 2751 ft, top salt 838 ft, dr 1120 ft. Benedum-Trees et al's Corder 1-A, top salt 1840 ft, dr 2775 ft. M. H. Black et al's Pecos Land Co. 1, lcn. M. Z. Dibble et al's Bonebrake 1, elev 2555 ft, top salt 1874 ft, pull casing 2004 ft. Doran & McGee's Pecos Land Co. 1, lcn. Grant et al's Turney 1, dr 3935 ft. McCarty Oil Co.'s Gray 1, dr 110 ft. Mauch & Krogen's Holmes 1, elev 2352 ft, top salt 535 ft, sd 1010 ft. Pecos Valley Oil Co.'s Fee 2, dr 115 ft. Phillips Pet. Co.'s J. L. Nutt 2, dr 980 ft. Schumaker et al's Williams 1, sd 520 ft. Southern Crude Oil Uur. Co.'s Scharbauer 1, elev 2680 ft, fsh 3380 ft. Stein & McGee's L. Peterson 1, lcn. Talbot & Dittman's Unsicker 1, dr 775 ft. Transcontinental Oil Co.'s University 1, elev 2552 ft, top lime 1035 ft, dr 4135 ft. Trees Oil Co.'s J. C. Trees 1, lcn. World Oil Co.'s Kloh 1, elev 2810 ft, sd 3105 ft.

PRESIDIO COUNTY—L. C. Brite Prod. Co.'s Brite 1, dr brown lime 4380 ft. Eastland Oil Co. et al's Tootle 1, spudded and sd. C. E. Miller-Delmar-Empire et al's Tootle 1, dr 1970 ft.

REAGAN COUNTY — The California Co.'s University 5, dr 735 ft. R. V. Oberholtzer et al's Talley 1, lcn.

REEVES COUNTY—E. W. Brooks et al's Eddins 1, elev 2719 ft, top salt 1622 ft, top gray lime 3216 ft, sd 5658 ft. D. P. Davis et al's Kinney 1, spudded and sd. Exploration Co.'s Kinney 1, elev 2847 ft, sd 2900 ft. Dr. Kitsos et al's Kloh 1, elev 2786 ft, sd 1706 ft. Bob Penn et al's Bowles 1, dr 935 ft. Lee O. White et al's Kloh 1, rig.

RUNNELS COUNTY—G. W. Boyce et al's Lange 1, dr 1050 ft. Gene Mays (was Foster) et al's Currie 1, spudded and sd. Ira Nourse-Tilton et al's Cramer 1, sd 2340 ft. Union Oil Co.'s Allen 1, dr 2345 ft. Vacuum Oil Co.'s Brevard 1, elev 1730 ft, sd hfw 2580 ft.

SCHLEICHER COUNTY — Ft. McKavitt Oil Co.'s Tisdale 1, sd 1060 ft. Interstate Prod. Co.'s Whitten 1, dk.

SCURRY COUNTY—Pender O. & G. Co.'s Davis 1, elev 2208 ft, top salt 445 ft, dr 1550 ft.

STERLING COUNTY — Foster-Gracey Oil Co.'s Foster 1, elev 2260 ft, dr 1735 ft.

SUTTON COUNTY—Phillips Pet. Co.'s Holman 1, dr by tools 5770 ft. Southern Crude Oil Pur. Co.'s Allison 1, dr 285 ft.

TAYLOR COUNTY—Burnham et al's Amyx 1, sd 2055 ft. Grisham-Hunter Corp.'s Campbell 1, rig. Mid-Continent Pet. Corp.'s Taylor 1, dr 2080 ft. Thompson et al's Hammer 1, co 455 ft. L. H. Wentz et al's R. L. Armour 1, dk.

TERRELL COUNTY—Milham Corp.'s Bassett 1, elev 2270 ft, cavey hole 4475 ft. Keck-Pecos Oil Trust's Hamilton 1, sd 1749 ft.

TERRY COUNTY—Superior Oil Prod. Co.'s Brownfield 1, elev 3205 ft, top lime 4565 ft, salt water 4586-88 ft, dr 4980 ft.

VAL VERDE COUNTY—Dyer Bros. et al's Wilson 1, sd 2160 ft. Producers Oil Co. et al's Everett 1, sd 1570 ft. Val Vert Oil Corp.'s Bassett 1-A, dr 2410 ft.

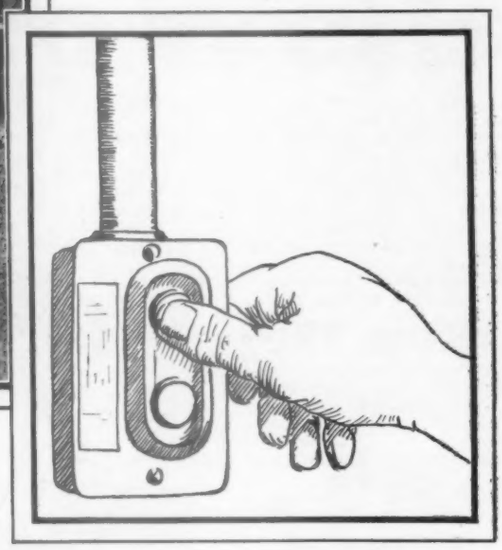
WARD COUNTY—Atlantic Oil Prod. Co. & Delmar Oil Co.'s Hayzlett 1, spudding. J-H-L Oil Co.'s Hayzlett 1, rig. E. B. Lovelace et al's Redman 1, spudded and sd. Prairie O. & G. Co.'s Sealy 1, elev 2666 ft, top salt 1073 ft, top lime 3110 ft, sd 3505 ft. Rector Oil Co.'s Johnson 1, elev 2438 ft, top salt 745 ft, top lime 2010 ft, set cas 2501 ft, dr 2520 ft. Talbot & Dittman et al's Dorr 1, elev 2430 ft, top salt 745 ft, sd in salt water 2550-58 ft.

WINKLER COUNTY — Amerada Pet. Corp.'s Daugherty 2, elev 2891 ft, top lime 2564 ft, mudded off gas, flowed 450 bbls 12 per cent water in 14 hrs at 3110-20 ft; Daugherty 3, set cas 2824 ft. Empire G. & F. Co.'s Daugherty 2, elev 2889 ft, top lime 2690 ft, stdz to dd, td 3150 ft; Daugherty 3, elev 2885 ft, top lime 2774 ft, fsh stem 3030 ft; Daugherty 1-B, elev 2090 ft, tcp lime 2821 ft, stdz 3165 ft. Gulf's Scarborough 1, rig. Prairie O. & G. Co.'s Daugherty 1, elev 2889 ft, top lime 2707 ft, making 10 million ft gas with spray oil and stdz 3150 ft; Daugherty 2, dr 2950 ft. Shell & Danciger O. & R. Co.'s Daugherty 2, elev 2903 ft, top lime 2742 ft, plug back from 3208 ft to 3170 ft. Shell & Llano Oil Co.'s Scarborough 4, rig. Texas-Canadian Oil Co.'s Kloh 1, lcn. Warner-Quinlan Co.'s J. D. Leck 1, elev 2901 ft, top lime 2665 ft, dr 2950 ft.

YOAKUM COUNTY—Bert Weekly et al's R. L. Knight 1, spudding.

ABBREVIATIONS

NOTE—The following is the explanation of abreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.



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MOUNTAIN STATES

COLORADO

ARCHULETA—Juanita Oil Co., Harvey 1, sw 4-32n-3w, stand 725 ft.

BENT—Marland Oil Co., Pipe Springs 1, se 27-29s-49w, sd for winter 3987 ft.

JACKSON—Producers & Refiners, State 1, ne 2-6n-81w, sd for the winter 1900 ft.

JEFFERSON—Ruby Hill O. & G. Co., Braden 1, se 14-4s-69w, dr 686 ft.

LAS ANIMAS—Alavier Pete Co., Branson 1, ne 3-35s-58w, sd for the winter. Parker Club, Kinney-Coastal 1, se 4-28s-68w, td 1350 ft., laying water line. Oklahoma-Colorado O. & G. Co., Dohery 1, sw 32-34s-60w, spudded 30 ft.

LA PLATA—Royal P. & R., Red Mesa 1, 27-33n-12w, sd 650 ft, bad roads.

LINCOLN—Kelly Oil Co., State 1, ne 36-14s-57w, sd 1400 ft.

MESA—Peerless Oil Co., Hoel 1, ne 23-8s-104, td 2058 ft, ready to deepen.

MORGAN—Badger Creek O. & G. Co., Kent 1, sd 2-50n-10, sd 800 ft.

MOFFAT—Ohio Oil Co., State 1, 16-12-100, fsh 3165 ft. Alliance Oil Co., Milliken 1, 14-4n-92w, susp 3575 ft. McLaughlin et al, Wms. 1, 2-3n-91w, dr 2260 ft. McCormick et al, Sales 1, se 28-4n-92w, sd 2700 ft, lost hole, skidding rig.

MONTROSE—Uncompahgre O. & G. Co., Colorado Title & Trust Co., 1, 27-50n-10w, dr 1470 ft.

RIO BLANCO—White Eagle O. & R. Co., Fordham 1, sw 9-2s-86w, fsh 450 ft.

YUMA—Etnyre Synd., sw 7-2s-43, dr 1345 ft.

WELD—Platte Valley Pete Corp., Patterson 1, sw 24-6n-61w, sd 4180 ft.

MONTANA

BIG HORN—Texas-Montana Prod. Co., 21-6s-35e, run cas 1100 ft.

BROADWATER—Swoboda et al, 1, 36-7n-2e, rigging. New Day Oil Co., 1, ne 29-5n-1e, no report.

BLAINE—Ohio Oil Co., Winngert 1, 3-34n-32e, fsh bailer 2315 ft.

CASCADE—Eden O. & G. Co., 27-18-4e, cem cave 780 ft and dr ahead. U. S. Pete Co., Miller 1, 8-21-4e, sd 935 ft. Lone Star, McLean 1, 13-21n-3e, sd 780 ft. Rothrock & Reynolds, McIver 1, se 12-20n-2e, sd 200 ft.

CARBON—Ohio Oil Co., Northern Pacific 1, 11-7s-21e, fsh tools 4458 ft.

CHOTEAU—Gerladine O. & G. Co., ne 1-21-11e, dr 1650 ft. Williston-Shelby O. & G. Co. 1, 12-28-11e, sd 2730 ft, wait special tools to dr by fsh job.

CUSTER—Montana Belle, ne 28-8n-45e, dr 1500 ft.

FERGUS—Melton Corp., sw 20-23-20, set 20-in at 180 ft, dr 200 ft. Judith Basin Oil Co. 1, 33-19-12e, water flows at 2000 to 2150 ft.

GALLATIN—California Co., Ringling 1, 35-5n-7e, ur 600 ft.

JUDITH BASIN—Gem Oil Co., 15-16-10e, rig up.

LIBERTY—Sunburst O. & R. Co. Bear's Den 1, nw 17-36-6e, another fsh job 1300 ft. Square Deal Pete., Johnson 1, se 1-32-7e, dr 3230 ft. Mid-Rocky Dev. Co., Federal Lands 1, 7-33-7e, sd 1500 ft. Western Nat. Gas Co., 22-37-4e, dr 2080 ft. Cypress Oil Co., State 1, sw 36-28-6e, sd 1600 ft, for winter.

MUSSELSHELL—Laffea Oil Co., 1, 6-10n-25e, lcn.

PONDERA—Trapp Synd., Hover 1, 35-28-22e, no report.

STILLWATER—J. S. Stewart, 5-2n-22e, no report.

SWEETGRASS — Shoshone Consolidated 1, 23-2n-15e, dr out cem plug, 4010 ft, last report.

TETON—Texas Pacific, 12-22-1w, dr 350 ft. Mitchener et al, Mattoon 1, sw 3-23-1w, dr through cem plug 1675 ft, last report.

WYOMING

BIG HORN—Utah Southern Oil Co. 3, 26-56n-87w, dr out cem plug at 3765 ft. Producers & Refiners 3, 24-56-98, sd 27-8 ft. Prairie O. & G. Co., Chilcote 1, 35-56n-95w, run 8¼-inch at 2175 ft. P. & R., South Frannie 1, 7-57-97, dr 1440 ft.

CARBON—P. & R., 2-19-88, sd 4003 ft. P. & R., O'Brien Springs 7, 12-24-88, dr 197 ft.

FREMONT—P. & R., Muskrat 2, nw 1-33n-92w, lcn. Gates & Holman, 6-33-94, material on location. Kinney-Coastal 1, 22-3n-1w, rig.

HOT SPRINGS—Texas Prod. Co., sw 23-45n-100w, dr 715 ft.

LINCOLN—Midwest Refining Co., Waterfall 1, 35-22-115, dr 2355 ft.

PARK—California Exploration Co. and P. & R. Pitchfork 1, 12-48n-102w, cem 20-inch at 225 ft. Midwest Rosenburg 36, 25-58-98, spudding 75 ft. Midwest, Kirk 1, se 23-58-98w, dr 790 ft.

SWEETWATER—Prairie O. & G., Tucker 1, 18-13-99, sd for winter 2480 ft. Ohio Oil Co., Humphreys 1, 2-12-101, cem 12½-inch at 1907 ft.

SUBLETTE—California Co., Wyss 1, 12-32n-115w, sd 1205 ft for fuel. California Co., Buchell 1, 11-29-115, ur 2503 ft.

UINTA—California Co., U. P. 1, 7-17-116w, dr 2524 ft.

NEW MEXICO

CHAVES — Snowden & McSweeney, Merchant 1, ne 27-15s-23e, strrmg to 3458 ft. R. E. Neal et al, Russell 1, 21-14-25e, stand 1100 ft. Warman et al, 1, sw 23-13s-24e, stand 251 ft. Tanehill et al., Butler 1, se 15-12s-24e, ready to spud.

DE BACA—Matador Oil Co., State 1, sw 6-4n-20e, dr 630 ft. McAdoo 1, ne 16-1s-27e, lease troubles, td 4190 ft. Transcontinental, McWhorter 1, 6-35-22e, dr 1365 ft.

GUADALUPE—Navajo Oil Co., Goard 1, 10-3n-17e, stand 3042 ft. Hanchett Oil Co. 2, 14-8n-24e, dr 450 ft.

LEA—Midwest Capps 31, sw 3-19s-38e, lcn. Midwest, Farnsworth 19, 12-26-37e, fsh 3900 ft. Midwest, Farnsworth 13C, 13-26-36e, dr 600 ft. Marland, Sholes 1, 19-25s-37e, fsh 3034 ft. Marland, Lynn 1, 26-23-36, 20M gas at 3575 ft. Marland, Brocks 1, sw 8-20s-33e, dr 3925 ft. Marland, Reed 1, 22-20s-36e, dr 2300 ft. Marland, Meyers 1, 26-20s-37e, fsh 3538 ft. Marland, Warren 1, 29-20s-36e, stand cem 2930 ft. Marland, Lockhart 1, 31-21s-36e, dr 2750 ft. Gypsy Oil Co., Mattern 1, 24-21s-36e, ready to spud. Exploration Co., Record 1, 26-19s-35e, td 4556 ft. Morton et al, State 1, ne 32-11s-38e, dr 1112 ft. Texas, Lynch 1, se 34-20-34, dr 1120 ft. Texas, Sheppard 1, ne 6-26s-37e, dr 3215 ft. Texas, Cagle 1, se 9-26s-36e, cpromg 3470 ft. Texas, Humphreys 1, nw 18-20s-32e, lcn. Texas, Moberly 1, se 17-26s-37e, dr 3310 ft. Curtis Dr. Co., Nixon 1, 22-18s-34e, wait pipe, td 1150 ft. Cranfill & Reynolds, Wilson 1, ne 23-25s-36e, lcn. Skelly Oil Co., Joiner 1, se 26-25s-36e, test 3287 ft. Hill & Abel, Maechtel 1, sw 5-26s-33e, dr 3700 ft. Maljamar Oil & Gas Corp., Pearsall 2, 30-17s-32e, dr 3430 ft. Empire Gas & Fuel Co., State 1A, nw 12-21s-34e, dr 2655 ft. Texas Pacific Coal & Oil, State 1, sw 22-23s-36e, dr water well. Prairie O. & G. Co., Slattery 1, ne 22-22s-34e, ready to spud. Henderson et al, McDonald 1, se 18-20s-34e, dr 790 ft. Vacuum Oil Co. 1, 14-17-34, lcn.

ROOSEVELT—J. T. Keegan et al, Pepper 1, 6-1s-36e, ready to bld rig. Smith & Sloan, Lovern 1, se 4-3s-35e, mvg in.

SAN JUAN—Continental Oil Co., Munoz 17, 2-29-19, sdtr tools, td 6338 ft. Dorothy Oil Co., 29-30-9, sd 712 ft. Huerfano Oil Co., Wiltbank 1, 25-29A-11, stndg 800 ft. San Juan Pete Co., 1, 9-29-13s, sd 2950 ft. Kirtland Dr. Co., Hunt 1, 10-29-15, td 450 ft. Kutz Canon O. & G. Co., Day 1, 29-28-11, dr 655 ft. Blackrock Oil Co., 1, sw 11-25s-13w, sd temp 1550 ft. Iowa Oil Synd., Viles 2, 28-29-11, dr 857 ft. Angel Peaks Oil Co., Kutz Canon 1, 11-28n-11w, fsh 1800 ft. R. R. Burke et al, Deneen 1, 18-21-13, sd 1006 ft. Hall et al 1, sd 507 ft. Milwaukee-New Mexico Synd., Beardsley 1, 30-28n-11w, sd 1100 ft.

SAN MIGUEL—E. Adams et al, Deason 1, 14-15n-16e, sd 1235 ft. Benedict-Wilson 1, ne 25-17n-16e, sd 800 ft.

TORRANCE—Bluhall O. & G. Co., 20-6n-10e, wtg cas 1444 ft. Hall et al., Pinos Wells 1, sw 25-3n-13e, stndg 400 ft. Sinnock et al, Kutchin 1, ne 13-7n-7e, spudding 69 ft.

VALENCIA — Rio Puerco Oil Co., New Mexico-Ariz. Land Co., 2, nw 13-6n-2w, wait pipe 3145 ft. Acme Oil Co., New Mexico-Ariz. Land Co., 1, 26-6n-3w, fsh 3595 ft.

UTAH

GRAND COUNTY — Utah Southern, Salt Valley 1, 13-23-21, resuming at 3001 ft. Utah Southern, Shafer 1A, 36-26-20, snowbound, sd 2578 ft. Navajo Pete Co., 2-29-21, sd for the winter at 2845 ft. Crescent Oil Synd., McCarthy 1, sw 27-21s-19, starting up 1602 ft. Big Six Oil Co., and Utah Oil Refining Co., Randall 1, 10-22-19, fsh 1710 ft. Brendell Sons, Crescent Eagle 2, 9-22-19, td 100 ft. Cisco Union O. & G. Co., 20-21-22, spudded. Signal Pete Corp., Sandburg 1, 7-21-19, sd 2457 ft., rigging up.

DUCHESNE COUNTY—Utah Southern Oil Co., Farnsworth 1, 29-4-1, dr 2130 ft.

SAN JUAN—Boulder Knoll O. & G. Co., 17-34-25, td 2640 ft. Navajo Pete Co. of California 1, 12-35-24 lcn.

UINTAH—Maude Ellen Oil Co., 1, 28-3s-21e, sd 1450 ft, broken stem.

UTAH—Diamond Oil Co., 3, ne 29-8s-5e, td 1700 ft.

WAYNE—Phillips Pete Corp., 1, 16-27-16, dr 4300 ft.

SOUTH LOUISIANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
LA FOURCHE PARISH—		
Gulf, Mrs. W. H. Stark et al 8, Thibodaux	*	1255

ACADIA PARISH—E. F. Simms' Clement 1, Jennings, sd 3872 ft; Clement 2, Jennings, sd 3840 ft; Grace Von Schueler 1, Jennings, dr 4770 ft sandy lime; Jennings Oil Co. 1, Jennings, sd 3545 ft; Cockrell 1, Jennings, sd 4330 ft; Cockrell 2, Jennings, lcn.

ASCENSION PARISH—Gulf's United Lands Co. 11, Sorrenta, ru; Belle Helene Sugar Co. 1, lcn, Sec 27-10s-2e. Triumph Oil Corp.'s J. D. Lacey et al 2, 1½ mi se Sorrento, sd 1100 ft. Burnside Oil Co.'s Roberts 1, wtg for cas, td 785 ft. Big Dome Drlg. & Dev. Co. and J. S. Kimbrough's Rearwood 1, se 700 ft of 10-in cas, td 1000 ft. Baton Rouge Pet. Co.'s Liotta 1, sd 1000 ft.

CALCASIEU PARISH—Union Sulphur Co.'s Fee 729, Sulphur, drk; Fee 733, Sulphur, testing at 3505 ft; Fee 735, Sulphur, dr 4910 ft sand; Fee 736, Sulhpur, dr 2260 ft sandy shale; Fee 737, Sulphur, completed for 1300 bbls at 3172 ft; Fee 739, Sulphur, ru; Fee 740, Sulphur, dr 3600 ft gbo; Fee 741, dr 116 ft clay. J. W. Watson et al's La. Land Co. 1, Sulphur, r to set 4½-in casing at 5042 ft.

CAMERON PARISH—Pure Oil Co.'s Yount-Lee Oil Co. 7, Sweet Lake, dr 4555 ft sand and shale; Yount-Lee 8, Sweet Lake, dr 3653 ft sand. The Texas Co.'s Calcasieu Lake B-4, East Hackberry, lcn; Calcasieu Lake A-3, South Calcasieu Lake dome, lcn. Seiss, Green & Sutton's Sauner 1, dr 1850 ft sandy shale. Rycade Oil Corp.'s Yount-Lee 1, Hackberry, bailing, showing sulphur water, 4310 ft. Yount-Lee Oil Co.'s Perkins 1, Hackberry, dr 2885 ft shale and lime; School Land 8, Hackberry, abn in salt 4510 ft; Vincent 1, Hackberry, lcn. Jno. D. Dickson's Duhon 1, Hackberry, ru. Cameron Oil Co.'s Benson Vincent 1, Hackberry, r to set cas over oil sand at 3266 ft. Noble Oil Co.'s Ellender 3, Hackberry, ru. Shell Pet. Corp.'s Watkins 6, Black Bayou dome, dr 2579 ft sandy lime; Witkins 7, Black Bayou dome, moving in drilling equipment.

IBERIA PARISH—La. Land & Explo. Co.'s Vermilion Bay A-3, dr 3745 ft sand and shale. Jefferson Lake Oil Co.'s Lake Peigneur 1, Jefferson Island, dr. Gulf's La. State Z-8, Loreauville, dr 1065 ft shale and lime; Fannie Kling et al 3, Loreauville, dr 2558 ft shale; Moresi Co. et al, Loreauville, drk.

IBERVILLE PARISH—Shell Pet. Corp.'s Wilbert 3, White Castle, set cas at 1480 ft. Standard of La.'s Wilbert 2, Bayou Blue dome, driving piling; Wilbert 3, Bayou Blue, lcn. Schwing 1, Bayou Blue dome, dr 1050 ft gbo. Union Sulphur Co.'s Schwing 3, Bayou des Glaise, dr 3485 ft rock.

JEFFERSON DAVIS PARISH — Vacuum's De Vilbiss 1, making some oil at 4201 ft.

LA FOURCHE PARISH—Gulf's Stark et al 8, Thibodaux, abn at 1255 ft; Stark 9, Thibodaux, lcn.

ST. LANDRY PARISH—The Texas Co.'s Botany Bay Fee 1, dr 3450 ft sand.

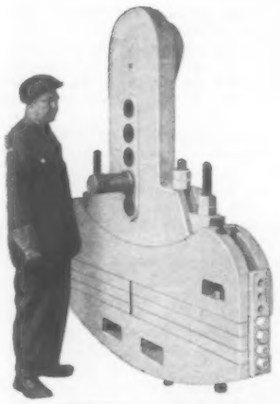
PLAQUEMINES PARISH—Gulf's Morris & Rose 1, ru.

POINTE COUPEE PARISH—Miller et al's Kornbacker 1, sd 1925 ft. Fruen et al's LaCour 1, rigging up, standing.

ST. MARTIN PARISH—Rycade Oil Corp.'s State 3, Bayou Bouillon, driving piling; Bayou Bouillon 6, ru; Atchafalaya Fee 3, Bayou Bouillon, cored 4364-69 ft; Atchafalaya Fee 5, Bayou Bouillon, drk. Ohio Oil Co.'s Martin et

OCS

Balance Deep Wells



PATENTED April 6, 1926
Other Patents Pending.

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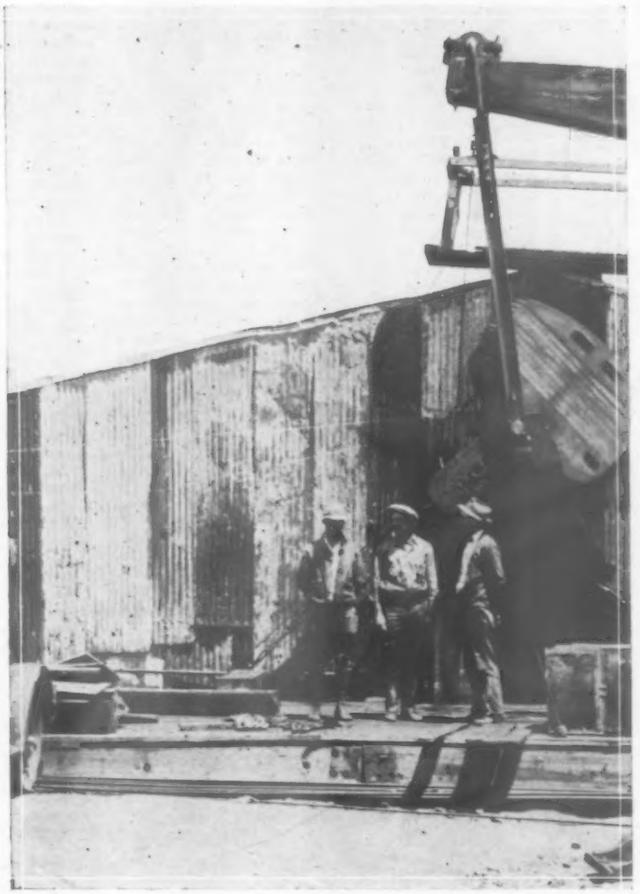

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al 3, Hager dome, dr 4100 ft sandy shale. Yount-Lee Oil Co.'s La. Pet. Co. 3, Anse la Butte, lcn.

ST. MARY PARISH—J. Dannenbaum et al's Le Blue 1, Charenton, sd 3015 ft.

ST. TAMMANY PARISH—Pearl Oil Corp.'s Fritsche 1, Slidell, repairing boilers, td 2020 ft.

TANGIPAHOA PARISH — Tanli Oil Co.'s Weinberger 2, td 4050 ft. Joan Dev. Co.'s Lake Superior Piling Co. 1, lcn.

TERREBONNE PARISH — Southern Gas Co.'s Peoples Sugar Co. 1, Houma, sd 2287 ft.

The Texas Co.'s Lake Barre 1, Lake Barre dome, lcn; Lake Pelto B-1, lcn; Timbailer Bay A-1, lcn; Bay Coon Road B-1, lcn.

TEXAS GULF COAST

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BRAZORIA COUNTY—		
Myers et al, Davidson 1, Clemens dome	*	1070
FORT BEND COUNTY—		
Fort Bend Oil Co., Moore 1, Orchard	*	3690
GOLIAD COUNTY—		
Alexander et al, Bergman 1, Goliad townsite	*	875
McCarson et al, Flake 1, Goliad townsite	*	22
VICTORIA COUNTY—		
Houston Oil Co., Kyle 2, ½ mi e Nursery	*	1160
WASHINGTON COUNTY—		
Sun Oil Co., Schirmer 2, Clay Creek	*	lcn

AUSTIN COUNTY — Humble's Hardy 2, Raccoon Bend, dr 1925 ft shale and lime; A. Grawunder C-1, Raccoon Bend, dr 2560 ft sandy shale; Sherrill 1, Raccoon Bend, drk; R. Dietrich 2, Raccoon Bend, drk; Walton 2, Raccoon Bend, flowing 50 bbls thru tubing; Urban 2, Raccoon Bend, cleaning up; Urban 3, Raccoon Bend, sd 198 ft; Roy Thompson 3, Raccoon Bend, Drk; J. W. Wilson 1, Raccoon Bend, ru; E. Kearns 2, Raccoon Bend, ru; E. B. Wilson 2, Roccoon Bend, dr 889 ft shale; Eckert 1, Raccoon Bend, ru. H. D. Brown's Brazos River 1, lcn.

BRAZORIA COUNTY — Shell Pet. Corp.'s Allen 5, Allen Dome, dr 4339 ft sandy shale; Reese 3, Allen Dome, dr 2718 ft sandy lime. Myers et al's Davidson 1, Clemens Dome, abn at 1070 ft. F. A. Bartlett's Dannenbaum 8, Stratton Ridge, sd 3145 ft. Empire G. & F. Co.'s Brock 2, dr 250 ft gbo.

CALHOUN COUNTY—Baker & Thompson's Thomas 1, 9 mi w Pt. Lavaca, dr 2390 ft gbo.

CHAMBERS COUNTY — Pure Oil Co.'s Mayes Est. 1, Lost Lake, dr 40 ft; Lost Lake 2, Lost Lake, dr 2520 ft gbo. Gulf's Wilborn 1, Anahuac, dr 3405 ft gbo. Mills Bennett Prod. Co.'s Kirby 2, Barbers Hill, swabbing; Smith 2, Barbers Hill, ru. M. Bennett-Republic's Means 1, Barbers Hill, sdtrk 1590 ft. Humphreys Corp.'s Kirby C-1, Barbers Hill, dr 5315 ft shale. Mike Kouri's Shaw 1, Barbers Hill, ru. Yount-Lee Oil Co.'s Chambers Co. 1, Barbers Hill, set cas at 5065 ft over oil show in sand at 5100-15 ft; Richardson 2, Barbers Hill, swabbing, 2080 ft.

COLORADO COUNTY — Rich Oil Corp.'s Brun 1, 3 mi ne Columbus, sd 1215 ft. The Texas Co.'s Koeton 1, Cat Springs, dr 300 ft. Humble's Byers 1, Altair, dr 275 ft.

FAYETTE COUNTY—Phalen et al's Cervanca 1, 6 mi s LaGrange, dr 3168 ft shale. National Oil Co.'s Melcher 1, Plum, dr 340 ft gbo. Moore et al's Kerr 1, Muldoon, sd 2078 ft. Merritt et al's Zvereck 1, 2 mi e Ellinger, lcn.

FORT BEND COUNTY—Sun Oil Co.'s E. C. Farmer 4, Boling, dr 3450 ft sand rock; Rodgers 2, Boling, ru. The Texas Co.'s Dippell B-1, Boling, ru; Dippell A-1, Boling, dr 2623 ft gbo; Pleasants 1, Boling, sd; E. C. Farmer 2, Boling, drk. Gulf's Moore 18, Moores field, dr 625 ft sand and lime; Trone 10, Long Point, dr 785 ft lime rock. Fort Bend Oil Co.'s Moore 1, Orchard, tested salt water at 3690 ft and abn. Boling Dome Oil Corp.'s Armstrong 1, Boling, cor and dr in hard sandy shale at 3725 ft. Humble's Brazos Farm 2, Sugarland, lcn; Brazos Farm 3, Sugarland, drk; Brazos Farm 4, Sugarland, lcn; Sugarland Industries 5, Sugarland, lcn; Deathridge 2, Sugarland, dr 2076 ft gbo; Nelson 1, Sugarland, dr 3305 ft sandy shale; Camp 2, Sugarland, ru. J. H. Diehl's Armstrong 1, 2 mi e Boling, sd 500 ft. South Texas Explo. Co.'s Hartfield 1, Needville, r to set 6⅝-in cas over sand at 4972 ft.

GALVESTON COUNTY — Long et al's Irvin & Bishop 1, 2 mi s Dickinson, sd 4322 ft. Republic Prod. Co.'s Lobit 1, 1 mi nw Dickinson, sd 3815 ft.

GOLIAD COUNTY—Alexander et al's Bergman 1, Goliad Townsite, abn 875 ft. McCarson et al's Flake 1, Goliad Townsite, abn at 22 ft. Southern Crude's J. L. Pettus 1, 10 mi nw Goliad, dr 3715 ft gbo.

HARDIN COUNTY—Gaddy Oil Co.'s Sternberg 1, Kountze, sd 1077 ft. Guedry Drlg. Co.'s Guedry 1, 3 mi s Batson, drk.

HARRIS COUNTY—Torsen et al's Stewart 1, 4 mi sw Genoa, sd 691 ft. Hunt et al's Lobit 1, 4 mi n Goose Creek, sd 2145 ft. The Texas Co.'s House 22, Humble, dr 3497 ft sand and shale. Humble's Warren 5, Hockley, td 1060 ft; Minnetex 1, Mykawa, dr 5171 ft sandy shale; Simms-Simth 74, Humble, dr 6592 ft sandy shale. Cullen & West's Morris 3, Humble, drk. Cedar Bayou Oil Co.'s Johnson 1, 8 mi n Goose Creek, sd 4650 ft. Paxton et al's Brubacker 1, 1 mi ne Clodine, sd 1125 ft. Baldwin and Leyland's Kitzman 1, 2 mi n Cypress, cored blue sand showing sulphur water at 3060 ft. Brains et al's Lentze 1, 4 mi s Tom Ball, sd 1120 ft. South Texas Pet. Co.'s Hicks & Higbee 1, Almeda, ru.

JACKSON COUNTY — The Texas Co.'s Moore 1, Edna, dr 3030 ft shale. Wright Bros.' Classen 2, Edna, dr 3390 ft rock. Douglas & Lawrence's Lawrence 1, Edna, sd 3020 ft.

JEFFERSON COUNTY — Deep Test Oil Corp.'s Faith McFaddin 1, 1 mi e Spindle Top, dr 3370 ft gbo. So. Spindle Top O. & Dev. Co.'s Young 1, 1 mi w Nederland, sd 3425 ft. J. W. Farhar et al's Rohwedder 1, 5 mi ne Beaumont, dr 960 ft gbo. Beaumont Oil Co.'s Tyrrell 1, 2 mi w Brocks, drk. Westbury Synd.'s West 1, 1 mi ne Westbury, sd 2625 ft. Gulf's Burrell et al 2, Fannette, came in at 5620 ft making 3500 bbls est, production caught fire, extinguished, now trying to put on well connections, making 1800 bbls oil. River Oil Co.'s Ship Channel Land Co. 1, 2 mi se Beaumont, sd 632 ft. Bleakie Oil Co.'s Tollivar 1, 2 mi ne Westbury, dr 932 ft gbo. The Texas Co.'s Pipkin & Davis 1, Big Hill, dr 3355 ft sand and lime.

LAVACA COUNTY—The Texas Co.'s Russick 1, 6 mi s Ezell, dr 940 ft gbo and lime.

LIBERTY COUNTY—Barlow et al's Hinchcliff 1, 2½ mi ne Cleveland, sd 2215 ft. Kouri et al's Campbell 1, 6 mi s Cleveland, sd 2000 ft. Big Dome Interests' Finley 2, 3 mi nw Hardin, drk. The Texas Co.'s Davis 2, Davis Hill, lcn. Humble's Sterling 3, Moss Bluff, sdtrk at 2965 ft. Sun Oil Co.'s Koveleika 1, N. Dayton, dr 4437 ft sandy shale. Union Explo. Co.'s Esperson 2, 5 mi s Dayton. lcn.

MATAGORDA COUNTY—Rycade's Hudson-Humble 4, Markham, dr 2004 ft gbo and lime. Crossland et al's Hawkins 1, Shepherds Mott, prep to test sand rock showing little gas at 2630 ft. Dr. P. S. Griffith's Culver 1, e Citrus Grove, sd 3215 ft; Baer 1, 1½ mi n Gulf Hill, sd 1900 ft.

ORANGE COUNTY — Veteran Oil Co.'s Reed 1, 2 mi se Orange field, td 2972 ft. The Texas Co.'s Kuhn 1, Pt. Neches, moving in rig.

VICTORIA COUNTY — Houston Oil Co.'s Kyle 2, ½ mi e Nursery, abn 1160 ft. Humble's Kuhutek 1, 1½ mi se Nursery, dr 360 ft sand.

WASHINGTON COUNTY—Sun Oil Co.'s J. Grote 1, Clay Creek, showed water, mostly, at 1341 ft; Marcus 1, Clay Creek, dr 3320 ft; Einman 1, Clay Creek, plugging back from 2598 ft to test shows of oil at 1800-1940 ft; Schirmer 2, Clay Creek, lcn, abn.

WALLER COUNTY—Dixie O. & G. Co.'s Brazos River State 1, San Felipe, sd 500 ft. The Texas Co.'s Young 1, Young's Ranch, lcn.

WHARTON COUNTY — Herte Oil Co.'s Brown 1, 3 mi s El Campo, dr 1510 ft sand and shale.

EAST TEXAS

BOWIE COUNTY—Hooks O. & G. Co.'s Rosenberg 1, King sur, temp abn, 3086 ft.

CAMP COUNTY—Rogers et al's Enfelt 1, Montgomery sur, sd wo 1978 ft.

CASS COUNTY—Davis & Pigg's Ed Lambert 1, Lambert sur, sd wo 1952 ft.

RED RIVER COUNTY—D. M. Buffington's Hoosier 1, Hughart sur, dr 1520 ft. Shad Harper's Garland 1, Jos. Wagley sur, trying to set 6⅝-in csg with pcker to test gas show, td 1776 ft. Johnson Pet. Co.'s Randolph 2, Dean sur, sd wo 1440 ft.

SHELBY COUNTY—Chapparal Oil Co.'s Holt 2, Mattjew Moore sur, dr 2810 ft. Gulf Ref. Co.'s Caraway 1, Patterson sur, sr 1600 ft.

UPSHUR COUNTY—F. S. Freeland's Newsom 1, Butler sur, arr ds test 2020 ft. Hudspeth 1, Jackson sur, dk, pat.

SOUTHWEST TEXAS

Completions

CALDWELL COUNTY—		
J. V. Edwards, Cardwell 1, Jolly dist.	*	1710
Rogers & Heap, Forister 1, n Lockhart	*	1658
Jarmon et al, Cabiness 1, Branyou dist.	*	2440
Gulf, Reed A-1, 1½ mi s Luling	*	2673
BASTROP COUNTY—		
Germany et al, Stewart 1, 1½ mi s Cedar Creek	*	1760
WEBB COUNTY—		
The Texas Co., Bruni B-1, 3 mi Mirando Pool	*	2502

BASTROP COUNTY—Sun Oil Co.'s Yost 1, Cedar Creek, plugged back from 1553 ft. Livingstone et al's McCall 1, wo, 1 mi s Bastrop, sd 1010 ft. The Texas Co.'s Yost 1, Cedar Creek, cemented 107 ft off bottom, td 1571 ft, bailed, and estimated will make 75 bbl pumper. Gypsy's Yost 1, Cedar Creek, coring serpentine at 1300 ft. Owens et al's White 1, 2 mi w Cedar Creek, cor 1225 ft; Goodman 1, 1½ mi Cedar Creek, spudded.

BLANCO COUNTY—Robt. A. Rodson's McDonald 1, sd 965 ft. C. W. Bates' H. Massey 1, sd 311 ft.

CALDWELL COUNTY — The Texas Co.'s Branyon 1-B, Branyon district, bailing, showing oil and water, top Edwards 2350 ft, td 2456 ft. Jarmon et al's C. W. Cabiness 1, Branyon district, abn at 2440 ft. Gulf's Reed A-1, 1½ mi s Luling, tested sulphur water at 2673 ft and abn. J. V. Edwards' Cardwell 1, Jolly district, abn at 1710 ft. Shell Pet. Corp.'s Wilhms 1, Jolly district, lcn. Bartlett Bros.' Martindale 2, Jolly district, top Edwards 1602 ft, prep to abn. Anderson et al's J. P. Horner 1, ru. Rogers & Heap's Forister 1, n Lockhart, Edwards lime 1608-58 ft, abn. S. & M. Corp.'s Lynch 1, set cas for oil show at 1822-32 ft.

DUVAL COUNTY — R. Driscoll's Fee 13, completed. O. Henry Oil Co.'s Henry 1, blk 1879, Snodgrass subdiv., dr 710 ft shale.

EDWARDS COUNTY — McMan Oil Co.'s Schreiner 1, ne part of county, fsh 3880 ft. Seagle Oil Co.'s Neal 1, 3 mi nw Barksdale, sd 4000 ft.

GUADALUPE COUNTY—Magnolia's Schubert 1, e Seguin, lcn. Christie et al's Thomas 1, 12 mi ne Seguin, set cas at 970 ft, td 1053 ft. Sights et al's Woekler 1, 5 mi e Seguin, drk. Miller Bros.' Springs 1, 4½ mi s Seguin, will set cas over oil show in Austin chalk at 1980-87 ft.

GONZALES COUNTY — The Texas Co.'s Lamkin 1, dr 395 ft sandy shale. Flynn et al's Wilhouser 1, 12 mi s Gonzales, moving in heavy rig to deepen from 4780 ft. Green et al's Div 1, sw part of county, dr 665 ft shale. Cranfill & Reynolds' Webb 1, Ottine area, dr 2000 ft shale. Joe Bruner's Miller 1, 1 mi n Waelder, ru and sd.

HAYES COUNTY — Moore et al's Sledge 1, 3 mi se Kyle, sd 700 ft.

HIDALGO COUNTY—Queen City O. & G. Co.'s Amer. Land & Irrig. Co. 2, 3 mi n Mercedes, sd 700 ft.

KERR COUNTY — McMan Oil Co.'s W. Schreiner 2, nw part of county, lcn.

JIM WELLS COUNTY—Cushing Oil Co.'s Perez 2, 3 mi n Alice, sd 2700 ft.

KINNEY COUNTY—Stephens et al's Clamp 1, fsh 2250 ft.

MAVERICK COUNTY—Rycade Oil Corp.'s Sullivan 3, se Eagle Pass, dr 5280 ft hard lime; Chittim 2, se Eagle Pass, preparing to shoot at 2467 ft, td 7635 ft; Chittim 3, se Eagle Pass, dr 1415 ft gray lime. Ryan Consolidated Pet. Corp.'s Indio Co. 2, 24 mi se Eagle Pass, will test gas show at 1320 ft.

STARR COUNTY—The Texas Co.'s Resendez 1, dr 3609 ft sandy shale.

UVALDE COUNTY—Pure's Smythe 2, ru.

WEBB COUNTY — G. S. Lumpkin's H. Yeager 1, blk 17, Fansler subdiv., porcion 33-34-55, lcn. The Texas Co.'s Bruni B-1, 3 mi from Mirando pool, abn at 2502 ft.

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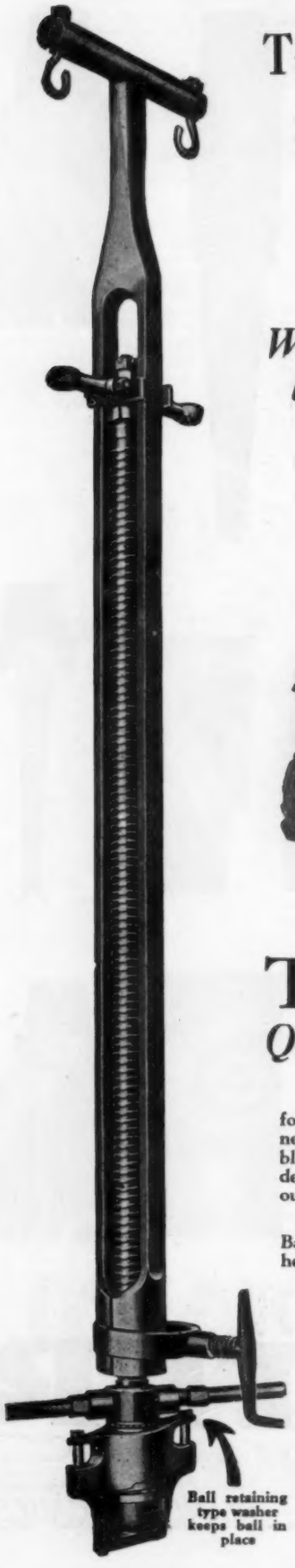

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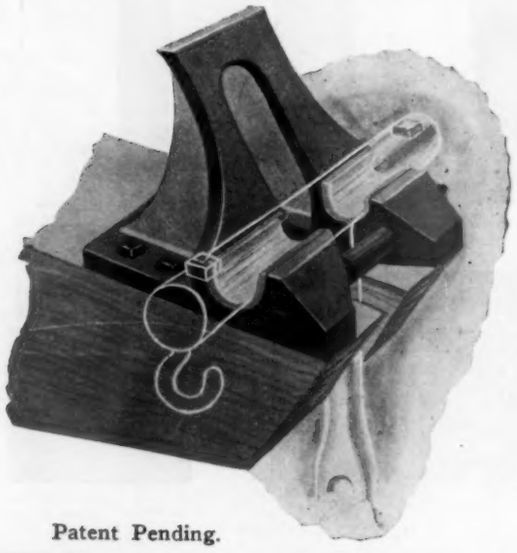

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WOODS COUNTY—T 28n, R 18w, Sec. 11, Geo. Vincent et al's Freedom 1, c sw, ponds for deep test.

GRANT COUNTY—T 28n, R 3w, Sec. 24, Lario O. & G. Co. et al's Conneil 1, nwc, td 1670 ft, sd.

HARPER COUNTY—T 27n, R 21w, Sec. 24, A. F. Kopisch, Selman 1, nec se, spudded and sd.

WOODS COUNTY—T 27n, R 16w, Sec. 33, Sinclair's Share 1, c ne sw, rig. T 27n, R 15w, Sec. 20, Sooner State Oil Co. & E. R. Black's Marcum 1, spudded and sd.

GRANT COUNTY—T 26n, R 4w, Sec. 34, Sooner State Oil Co.'s Royce 1, swc nw, sd 550 ft.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent and Nat'l Union's McNeal 1, nw cor ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 22w, Sec. 14, Hoffer Oil Co.'s Cooper 1, nwc se, sd 4182 ft, blk in litigation.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu Vi Bar et al's 1, sec sw, cmtd 12-inch at 1347 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden's Vollner 2, nec se ne sw, lost tools 5640 ft sd.

CIMARRON COUNTY—T 5n, R 5e, Sec. 22, Magnolia's School Land 1, c se ne, rig.

TEXAS COUNTY—T 1n, R 18e, Sec. 11, Three Way Oil Co.'s Price 1, sec nw, sd 3490 ft.

WOODWARD COUNTY—T 24n, R 17w, Sec. 32, Otstot Dev. Co.'s Simmons 1, sec, sd 1500 ft.

WOODS COUNTY—T 24n, R 13w, Sec. 18, Miller and others Copenhaver 1, nwc, spudded and sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, Washoma Oil Co.'s Acre 1, swc ne, rig.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer's White 1, sec nw, sd 4755 ft.

WOODWARD COUNTY—T 23n, R 20w, Sec. 9, Billy Oil Co.'s Wyatt 1, c se, sd 1553 ft.

MAJOR COUNTY—T 23n, R 16w, Sec. 4, Wilson et al's 1, nec sw, rig.

WOODWARD COUNTY — T 24n, R 19w, Sec. 15, Burgoyne Bros.' 1, swc se ne, sd 1950 ft. T 24n, R 21w, Sec. 25, Sharon's Elmore 1, swc, sd 3025 ft, rig down.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Keller et al's Horton 1, c ne ne, spudded and sd.

GARFIELD COUNTY—T 20n, R 4w, Sec. 9, Marland's Looman 1, nec se, sd 5735 ft, csg parted. Sec. 12, Marland's Miller 1, swc sd, 4586 ft.

DEWEY COUNTY—T 18n, R 15w, Sec. 9, Huckleby & McCoy's Perfect 1, nec, fsh 4395 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Haley & Consolidated Drlg. Co.'s Quier 1, sec sw, fsh tools 3970 ft.

KINGFISHER COUNTY — T 16n, R 6w, Sec. 27, Crawford & McKenna's Sturgeon 1, sec sw, sd 4846 ft.

BLAINE COUNTY—T 15n, R 12w, Sec. 26, W. J. Donley's Dickens 1, sec nw, dr 4420 ft.

CANADIAN COUNTY—T 14n, R 6w, Sec. 9, A. D. Spears' Piatt 1, sec ne, sd 3223 ft. T 13n, R 10w, Sec. 18, Wirt Franklin & I. I. IL. O.'s North 1, c ne ne, dr 2180 ft.

OKLAHOMA COUNTY—T 13n, R 3w, Sec. 18, Slick & Bailey's Lufkin 1, c ne se, dr 4790 ft. T 12n, R 3w, Sec. 15, Cromwell et al's Thompson 1, sec ne ne, dr 7124 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw, sd after spudding.

OSAGE COUNTY—T 22n, R 8e, Sec. 8, Harry McGill's 1, swc se ur 8-inch csg 2440 ft.

PAWNEE COUNTY—T 22n, R 5e, Sec. 33, Wasnoma Oil Co.'s Buffalo 1, sec nw, sd 3812 ft.

LINCOLN COUNTY—T 16n, R 4e, Sec. 15, J. V. Bailey et al's House 1, c ne se, co 3385 ft. T 16n, R 5e, Sec. 2, L. C. Wheeler & W. K. Mote et al's Wolfe 1, nwc ne sw, rigging up. T 16n, R 6e, Sec. 19, Flynn & Morgan's Finely 1, swc, lcn. T 15n, R 6e, Sec. 23, Shaffer O. & R. Co. et al's Pinkston 1, nec sw, sd 4222

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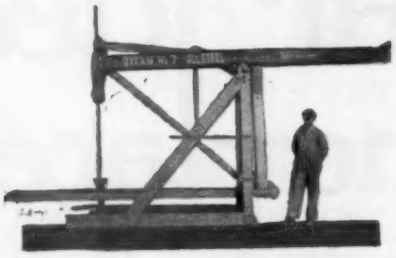

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ft, water. T 12n, R 3e, Sec. 29, Phiillps Roberson 1, sec nw, rig.

OKFUSKEE COUNTY—T 12n, R 9e, Sec. 30, Tidal Oil Co.'s Barnett 1, sec ne ne, dr 1615 ft.

MUSKOGEE COUNTY—T 13n, R 18e, Sec. 33, L. T. Haynie's Linder 1, c se, dr 2307 ft.

McINTOSH COUNTY—T 12n, R 18e, Sec. 15, A. B. Wolfe et al's Beck 1, nwc se, spudded and sd.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, swc nw se, Wilcox 5443-65 ft, sd.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion Oil Co.'s Sanders 1, nwc ne sw, sd 1800 ft.

LATIMER COUNTY—T 5n, R 18e, Sec. 15, Limestone O. & G. Co.'s Murray 1, swc, 1½M gas 2518-22 ft, sd.

SEMINOLE COUNTY—T 11n, R 6e, Sec. 27, Fuhrman's Fay 1, sec nw sw, dr 4755 ft.

OKFUSKEE COUNTY—T 11n, R 7e, Sec. 21, T. B. Slick's Wolfe 1, sec ne se, cmt 8-inch 3900 ft.

SEMINOLE COUNTY—T 11n, R 7e, Sec. 34, Phillips' Mills 1, nwc sw, dr 3230 ft.

CLEVELAND COUNTY — T 10n, R 2w, Sec. 8, Slick & Phillips' Sudik 1, c ne ne, dr 2780 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 16, McCulloch et al's Lincoln 1, sec nw, lcn. T 10n, R 7e, Sec. 5, Marland Oil Co.'s Strothers 1, nwc se ne, fsh 3550 ft.

POTTAWATOMIE COUNTY—T 9n, R 5e, Sec. 30, Magnolia Pet. Co.'s Germany 1, sec nw, 4395 ft, testing. T 8n, R 2e, Sec. 24, Superior Oil Corp.'s Jones 1, swc nw ne, cmtg 5-inch 4926 ft. T 8n, R 3e, Sec. 12, T. B. Slick's Nix 1, sec nw nw, dr 3665 ft.

SEMINOLE COUNTY—T 8n, R 8e, Sec. 4, McCulloch's McGilbray 1, swc ne, ur 10-inch csg 1940 ft, hfw.

CLEVELAND COUNTY—T 7n, R 1w, Sec. 15, Socner State Oil Co.'s Vandeveer, nec nw sw, sd 3120 ft.

POTTAWATOMIE COUNTY—T 7n, R 2e, Sec. 17, T. B. Slick's Spangler 1, nwc se nw nw, fsh 6098 ft. T 6n, R 4e, Sec. 19, Rush & Baughm's Laster 1, sec ne ne, lcn.

McCLAIN COUNTY—T 5n, R 3e, Sec. 22, Mid Cont. Pet. Corp. 1, sec, lcn. T 5n, R 3e, Sec. 29, Empire's Bonner 1, sec nw nw, dr 4330 ft.

PONTOTOC COUNTY—T 5n, R 4e, Sec. 36, Denver P. & R.'s Roberts 1, sec ne ne, rig.

SEMINOLE COUNTY—T 5n, R 6e, Sec. 11, Slick's Harjo 1, nwc ne, td 3950 ft, hfw.

HUGHES COUNTY—T 5n, R 9e, Sec. 17, E. W. Whitney's Huddleston 1, sec sw, ur 6-inch 3345 ft.

PONTOTOC COUNTY—T 4n, R 8e, Sec. 25, Independent's Hampton 1, nec se, rigging up rotary.

PITTSBURG COUNTY—T 4n, R 12e, Sec. 32, Kerr & Key's Rall 1, c nw nw, dr 50 ft.

COAL COUNTY—T 2n, R 8e, Sec. 6, F. T. Hepburn's Richardson 1, c ne ne, lcn.

MURRAY COUNTY—T 1n, R 2e, Sec. 17, Revels & McGee's Wolfe 1, nwc, sd 1850 ft.

GARVIN COUNTY—T 1n, R 3e, Sec. 32, Ramsey's Malickey 1, c sw ne, bldg rig.

COAL COUNTY—T 1n, R 9e, Sec. 24, Galbreath et al's Jones 1, swc se, sd 3270 ft.

CUSTER COUNTY—T 14n, R 14w, Sec. 1, W. E. Witt's Wellman 1, c se, sd 100 ft.

ROGER MILLS COUNTY—T 11n, R 26w, Sec. 4, L. C. Hivick et al's Davis 1, c nw ne, sd 700 ft.

BECKHAM COUNTY—T 8n, R 25w, Sec. 1, C. L. Martin's Daly 1, c nw se, td 2547 ft, sd. T 8n, R 22w, Sec. 20, Carson et al's Denby 1, swc se ne, sd 790 ft. T 8n, R 21w, Sec. 33, Day Oil Co.'s Ault 1, c nw nw, dr 1473 ft.

KIOWA COUNTY—T 7n, R 17w, Sec. 34, G. B. Cloyes' Bristle 1, swc ne, rigging up star. T 7n, R 15w, Sec. 35, David Malernee's Van Kirkland 1, nwc, sd 858 ft, flowing sulphur water. T 6n, R 15w, Sec. 6, Johnson-McDowell 1, c sw ne, td 2700 ft. T 6n, R 14w, Sec. 32, Russel & Sloan's Madden 1, nec sw sw, lcn.

CADDO COUNTY—T 6n, R 12w, Sec. 29, W. J. Hartley's Galbreath 1, sec nw se, owdd, sd 3394 ft.

COMANCHE COUNTY—T 4n, R 11w, Sec. 2, Wirt Franklin Pet. Corp.'s Hollow 1, nwc, coring sand at 3023 ft.

JACKSON COUNTY—T 1n, R 20w, Sec. 4,

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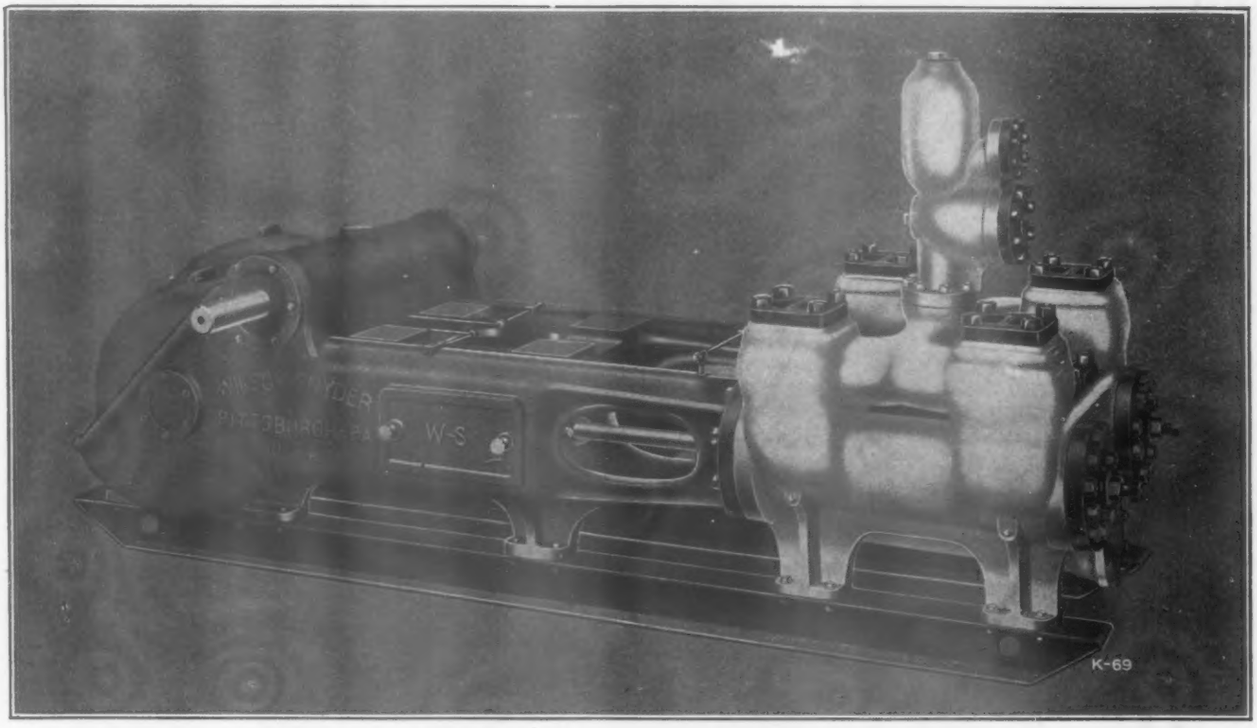

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Houseman et al's Northington 1, nec sd 2020 ft.

KIOWA COUNTY—T 1n, R 17w, Sec. 13, Allen Bros.' Howell 1, nwc se, sd 535 ft.

STEPHENS COUNTY—T 1n, R 7w, Sec. 2, Stahl & Burris' Jefferson 1, sec ne nw, sd 2624 ft.

COTTON COUNTY—T 1s, R 11w, Sec. 34, Shasta Oil Co.'s Indian 1, nec, lcn.

STEPHENS COUNTY—T 1s, R 7w, Sec. 12, Ilsing, Russell & Nance's Houston 1, nec sw sw, sd 2075 ft.

KIOWA COUNTY—T 2s, R 16w, Sec. 6, Landfair's 1, sec sw se, dr 2535 ft.

COTTON COUNTY—T 2s, R 12w, Sec. 31, Pearce & Brown's Heitzler 1, sec nw, moving in tools.

TILLMAN COUNTY—T 3s, R 18w, Sec. 29, Dixie Oil Co.'s Harrison 1, nec nw, dr 1650 ft.

COTTON COUNTY—T 3s, R 10w, Sec. 11, E. J. Stumpf's Jones 1, nwc ne, lcn.

STEPHENS COUNTY—T 3s, R 8w, Sec. 26, E. J. Stumpf's Simmons 1, swc rig.

COTTON COUNTY—T 4s, R 12w, Sec. 16, Guiler & Dyson's Thomas 1, sec sw, sd 2127 ft.

JOHNSTON COUNTY—T 1s, R 7e, Sec. 29, Smitty-Kinsley's Lane 1, sec nw, sd, 1306 ft.

CARTER COUNTY—T 4s, R 2e, Sec. 32, Tex-Okla. Drlg. Co.'s Anderson 1, sec ne se, dr 300 ft. T 5s, R 3w, Sec. 19, Devonian Oil Co.'s Myer 1, nwc se, dr 1660 ft.

BRYAN COUNTY—T 9s, R 9e, Sec. 36, Endicott's Craig 1, c nw ne, fsh 830 ft.

KANSAS

BARBER COUNTY — Barbara Oil Co.'s Lytle 1, cnl ne ne sw 12-33-13w, spudded. Barbara's Blunk 1, c ne nw 20-34-13w, fsh 4755 ft. Roland et al's Pickens 1, ne nw ne 27-30-14w, sd 4223 ft. Allison & Fitzwilliams' Morrise 1, c nw se se 9-30-12w,, rig.

BUTLER COUNTY—LaRobb et al's Bransenger 1, ne se 24-27-3e, ru. Barnsdall's Means 1, nw sw 34-27-2e, dr 2600 ft.

CHASE COUNTY—Grisner & Fowler's Carson 1, ne ne 9-21-7e, sd 3150 ft.

COWLEY COUNTY—Pyle & Sutter's Lindstrum 1, se ne 9-35-4e, dr 2215 ft. Empire-Marland-Twin State's Feaster 1, nw ne 36-32-5e, pb 3165 ft. Wakefield & Osborne's Osborne 1, nw ne 18-30-5e, ru.

EDWARDS COUNTY — Amerada-Wilcox, Teansil 1, nw cor 32-25-19w, dr 4050 ft. British-American Oil Co.'s McCarty 1, ne nw 31-25-17w, spudded and sd.

ELLIS COUNTY — Rush Oil Co.'s Gatewood 1, nw 4-15-20w, sd 1100 ft. Finney & Weimer's Freeman 1, nw se se 24-15-20w, spudded and sd. Empire's Wann 1, ne 31-12-19w, csg 3515 ft. Marland's Vine 1, sw se 27-11-9w, dr 3760 ft. Transcontinental's Boetcher 1, nw se sw 21-13-19w, fsh 3858 ft. Phillips' Brull 1, c nw 34-14-17w, dr 1700 ft. Phillips' Schmeidler 1, nw cor 20-12-17w, dr 540 ft. Labette Oil Co.'s Urbank 1, ne nw nw 19-15-16w, dr 5360 ft. Cosby et al's Robbins 1, sw nw 15-14-16w, ru. Phillips' Johnson 1, sw ne 9-13-19w, ru. Derby & Empire's Krause 1, nw sw sw 17-14-19w, cmtg 3802 ft. Davis & Hazlett's Weiland 1, nec 1-13-16w, dr 1125 ft.

GREENWOOD COUNTY—P. H. Balieu's Bright 1, ne sw 22-27-1e, sd 1210 ft.

HARPER COUNTY—Amerada's Mendiville 1, c se se 24-34-6w, co 5353 ft, td 5360 ft.

HARVEY COUNTY — Margaret Gay Oil Co.'s Grouse 1, nw ne nw 29-23-1w, spudded. Helmerick & Payne's Lindamood 1, c sw ne sw 2-22-1e, spudded and sd. Empire's Tangeman 1, c sw ne ne 19-22-1e, ru. R. F. Garland's Cox 1, ne cor 27-24-1w, dr 1700 ft. Fisher & Lauck's Regier 1, nw ne 17-23-2e, dr 900 ft. Austin's Neiman 1, swc 21-24-2e, dr 2920 ft.

JEFFERSON COUNTY—Wichita Oil Co.'s Simpson 1, nw sw sw 19-10-17e, sd ru.

LANE COUNTY — Blankenship Pet. Co.'s Schaeffer 1, nec ne 24-16-28w, spudded and sd.

MARSHALL COUNTY—Irwin et al's Cooper 1, ne nw 10-3-7e, spudded.

MORRIS COUNTY—Hiatt et al's Blythe 1, nw ne 35-15-5e, rig.

McPHERSON COUNTY—McPherson County Gas Co.'s Stein 1, sw ne sw 17-18-1w, dr 3083 ft. McPherson County's Gustafson 1, c ne 9-17-2w, spudded and sd. Ted Washabaugh's Vosshell 1, ne ne 9-21-3w, sd 2100 ft. Lariaux et al's Martinan 1, ne se 9-19-3w, rig. Mid-Kansas' Yoder 1, c nw sw 8-20-4w, dr 1500 ft.

NESS COUNTY—Barnsdall's Lauck 1, c sw 35-18-21w, csg 600 ft.

OSBORNE COUNTY—L. D. Jarvis Jellison 1, sec 13-10-15w, spudded and sd.

OTTAWA COUNTY — Anderson et al's Bank 1, ne nw 28-10-2w, sd 2820 ft.

PAWNEE COUNTY—F. C. Troupe's Lovett 1, cel ne ne 31-21-16w, dr 300 ft.

PHILLIPS COUNTY—Watsonian Oil Co.'s Marklein 1, ne sw 21-3-19w, sd 3015 ft. Watsonian and British-American's Weinman 1, c sw sw 34-2-19w.

RICE COUNTY — Allison & Fitzwilliams' Poland 1, ne sw ne, 36-19-8w, cellar. Higgins & Steinbuble, Shurr 1, ne sw 21-20-10w, spudded and sd.

RENO COUNTY—Austin Drlg. Co.'s Strickly 1, swc nw 17-26-5w, timbers.

ROOKS COUNTY—Krueger et al's Poore 1, ne ne 14-8-16w, dr 3525 ft. Prairie's Sandberg 1, c sw 20-9-18w, dr 880 ft. Prairie's Gick 1, c se 22-9-19w, dr 410 ft.

RUSH COUNTY—Danciger O. & R. Co.'s Pinonka 1, c ne sw ne 17-19-17w, sd 530 ft. Sinclair's Beiching 1, nw ne nw 9-16-16w, fsh 3472 ft. Central Commercial Brack 1, nec sw sw 12-17-16w, spudded and sd. Phillips' Legleiter 1, c ne nw se 10-16-18w, dr 310 ft.

SALINE COUNTY—M. Esty et al's Peterson 1, c ne 6-16-5w, spudded and sd. Nathan-Jones et al's Robertson 1, nw sw 27-14-2w, dr 2850 ft.

SEDGWICK COUNTY—Buvibar Pet. Co.'s Steel 1, sec 1-26-2w, dr 3395 ft. Barnsdall's Samuels 1, ne nw 24-25-1e, dr 2660 ft. Barnsdall's Faber 1, sw ne 6-27-1w, sd 3010 ft. Morgan & Tilley's Fitzgerald 1, nw ne 5-26-1w, ru. Van Zandt & Mason's Fox 1, c nw sw 19-25-1w, ur 8-inch csg 2994 ft. Connell Oil Co.'s Cross 1, ne cor 27-25-1e, dr 2955 ft. Morgan et al's Corn 1, sw ne 28-25-1w, dr 1000 ft. Kyser et al's Stroot 1, sw nw 28-26-1w, dr 970 ft. H. H. Patton's Ryder 1, nec 22-25-1e, rig. Lario & Blair's Tjaden 1, c ne se 22-29-2w, csg 1930 ft. Maglason's Buckles 1, nw se 3-28-1w, sd 250 ft. McCulloch et al's John 1, c ne sw ne 24-29-1e, dr 1930 ft. Miller & Wentz's Shaeffer 1, nw ne 9-27-2w, rig. Lewis et al's Taylor 1, nw ne 23-27-2e, dr 1170 ft. Magnolia's Wise 1, nwc 36-28-2w, timbers. Shawer et al's Reeves 1, c se sw se 19-28-1e, spudded.

SHERMAN COUNTY—A. L. Henson et al's Murray 1, ne se nw 22-7-40w, sd 3035 ft.

SMITH COUNTY—Mid-Kansas's Blank 1, nec 4-2s-13w, dr 900 ft.

STEPHENS COUNTY—W. Sidwell et al's Kelly 1, sw ne 16-34-38w, sd 1160 ft. Trees Oil Co.'s Unknown 1, sw ne sw 3-35-38w, skid rig. McKenna et al's Hamm 1, se ne 10-33-38w, dr 1510 ft.

SUMNER COUNTY—Gypspy's Williams 1, nw se sw 16-35-3w, fsh 4400 ft. McCulloch et al's Tuttle 1, sw ne 29-34-1w, dr 4479 ft. Otstot et al's Volker 1, nw ne 9-35-1e, rig abn. Davidson et al's Strickland 1, sw se 12-35-1w, rig.

TREGO COUNTY—Central Commercial Oil Co.'s Ellis 1, ne sw ne 20-13-21w, dr 3080 ft.

WASHINGTON COUNTY—McCool & Vincent's Linn 1, nw ne 27-4-3e, ru.

NORTHERN CALIFORNIA

KERN COUNTY—

BUTONWILLOW — Doheny-Stone Drilling Corp.'s Salisbury 1, 7-29-24, will deepen from 4260 ft. Southern California Gas Co.'s 1, 10-28-23, lcn.

COMANCHE POINT—W. W. Stabler's Tejon 1, 23-32-29, sd 3130 ft.

DELANO—S. A. Delzel's Vedder 1, 4-26-27, dr oil sand and shale 3175 ft.

EDISON—Midway-Northern Oil Co.'s Brown 1, 29-29-30, sd 3775 ft. Symark Oil Co.'s 1, 24-29-29, dr shale 755 ft.

GOULD HILLS—Exeter Oil Co.'s Pray 2, 1-29-29, produced 25 bbls on test, td 870 ft.

RIO BRAVO—Pacific Coast Oil Co.'s 1, 15-19-25, rigging rotary. Elmer Oil Co.'s 1, 8-28-25, fsh for dr pipe, td 5500 ft.

SAN EMIDIO—Standard's KCL-1, 35-11-22, fsh for dr pipe 3780 ft. Union's KCL-1, 5-10-21, sdtr bit 1615 ft.

SEMITROPIC—Richfield's Kerwin 1, 21-26-22, co 4700 ft, td 4760 ft.

SANTA BARBARA COUNTY

CARPENTERIA—Continental's Franklin 1, dr shale 3375 ft.

GOLETA — Elwood Consolidated Oil Co.'s

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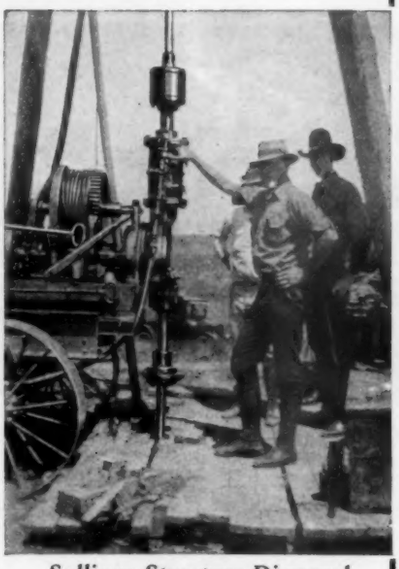

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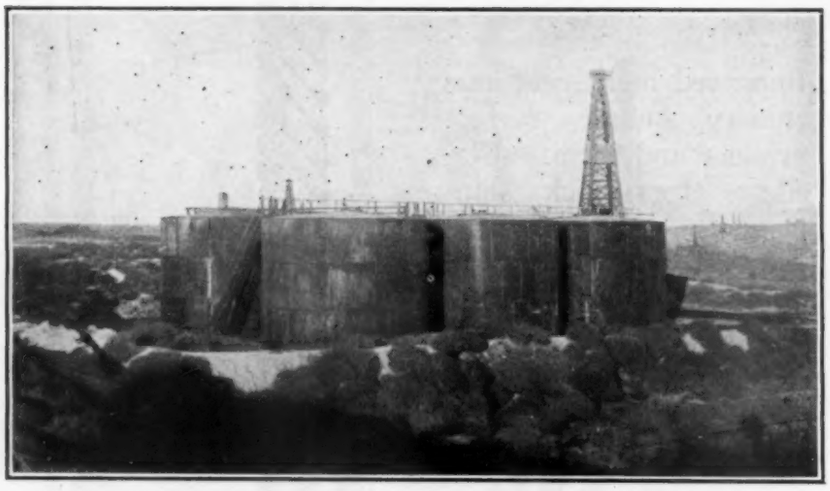

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POINT ARQUELLA—Standard's Schyvers 1, dr shale 500 ft.

POINT CONCEPTION—Standard's Gerber 1, rig.

SANTA BARBARA—Channell Oil and Development Co.'s 1, 29-4-27, co 6300 ft.

SANTA MARIA—Shell's Union Sugar 1, 36-10-35, coring 1000 ft.

VENTURA COUNTY

BARDSDALE—Triple A. Investment Co.'s Elkins 1, 28-4-19, sd 2860 ft.

CAMARILLO—American Oil Co.'s 1, 33-2-20, dr hard rock 655 ft.

CONEJO—Triunfo Oil Co.'s 1, 24-1-19, dr 200 ft.

FILLMORE—No active operations near this point.

OJAI—Continental's Fox 1-M, 21-4-22, dr brown shale 3370 ft; Thompson 1-A, 22-4-22, dr shale 3875 ft. E. J. Miley's Castias 2-A, 12-3-21, installing rotary, td 775 ft. Rio Grande Oil Co.'s BBN-1, 13-4-19, co 2150 ft. Pacific-Western Oil Co.'s 5, 3-4-28, dr shale and sand 3200 ft.

SANTA PAULA—W. W. Bryant's 3, 31-4-21, dr shale 800 ft.

SATICOY—Standard's Citrus 5, 10-2-22, dr shale and hard sand.

SIMI—Emma F. Exline's Seaton 1, 32-5-21, fsh for dr pipe, td 2415 ft. Shell's Marr 1, 31-3-17, dr blue shale 1110 ft.

SOUTH MOUNTAIN—Ring Pet. Co.'s Converse 1, 3-3-21, dr 4850 ft.

VENTURA AVENUE—Star Pet. Co.'s Canet 1-A, 13-3-23, will deepen from 6775 ft.

MISCELLANEOUS

FRESNO COUNTY—Currency Pet. Co.'s 1, 28-21-14, dr blue shale 888 ft.

MONTEREY COUNTY—Shell's Dudley 1, 15-22-9, new lcn.

SAN LUIS OBISPO COUNTY—Panorama Oil Co.'s 1, 7-31-21, dr black shale 3350 ft. San Luis Syn.'s 1, 29-31-13, co 3090 ft. Texas Pacific Coal and Oil Co.'s Dutton 1, 25-32-14, dr brown shale 2200 ft. Union's Russ 1, 31-32-15, sr 3125 ft, td 3180 ft; Chandler 1, 12-32-15, sr 2650 ft, td 2860 ft.

TULARE COUNTY—Angiola Development Co.'s 1, 27-22-23, dr sand 2910 ft. Didley Ridge Oil Co.'s 1, 12-23-19, dr shale 850 ft. Kings-Tulare Syn.'s Palmer 1, 19-12-23, perforating liner, td 5785 ft.

SOUTHERN CALIFORNIA

BELLFLOWER—Dollar Oil Co.'s Blythe 1, dr shale 4540 ft.

CHATSWORTH—Russell Pet. Co.'s Joughin 2, dr hard sand 765 ft.

COSTA MESA—Mesa Pet. Corp.'s B. A. 1, 16-6-10, sd 3450 ft.

DOWNEY—Association's Taylor 1, 33-2-12, dr gray sand 5875 ft. Rio Grande Oil Co.'s Adams 1, 4-2-12, dr shale 1190 ft.

GARDEN GROVE—The Texas Co.'s Crawford 1, dr hard sand 3300 ft.

HUNTINGTON BEACH—Western Drilling and Producing Co.'s Pacific Ranch 1, 18-6-10, fsh 4440 ft; Meyer 1, 18-6-10, new lcn.

INGLEWOOD—Ring Pet. Corp.'s Simons 1, 28-23-14, rigging to deepen, td 4350 ft. California-Eastern Oil Co.'s 1, 28-2-14, dr shale and sand 3130 ft. McCluskey and Stevens' 1, Manchester and Spruce Avenues, new lcn.

MAYWOOD—Richfield's Community 1, dr shale 3300 ft.

MONTEREY PARK—Monterey Park Pet. Co.'s Jepson 1, sd 3950 ft.

NEWHALL — California-Eastern Oil Co.'s Hasley 1, 5-4-17, made some gas on test, td 2860 ft.

POMONA—Pomona Oil Ass'n.'s Community 1, 32-1-18, dr shale 985 ft.

PUENTE HILLS—Richfield's Didier 1, will test oil sand, td 3435 ft.

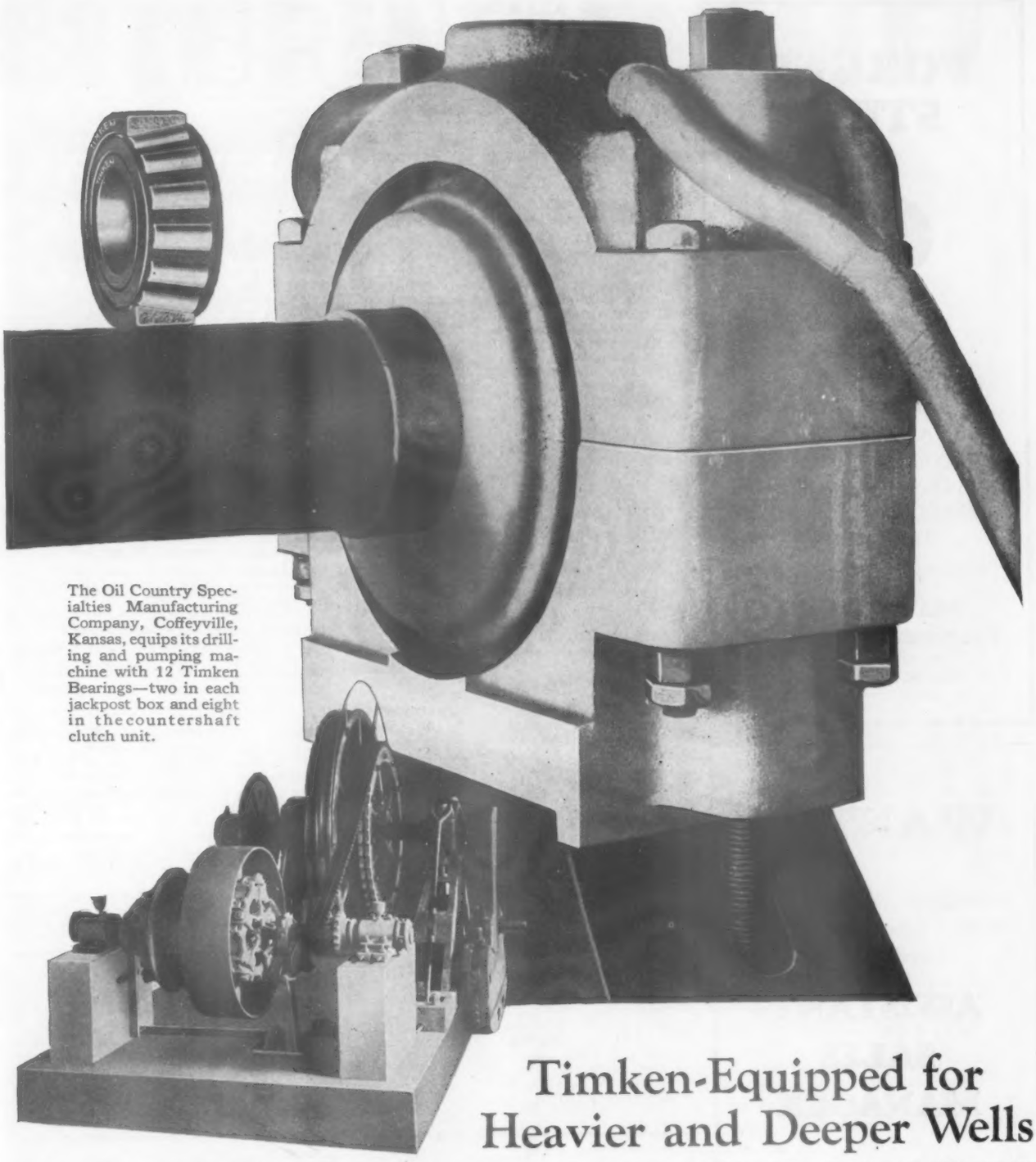
RIVERA—Empire Drilling Co.'s Purman 1, 14-2-12, sd 5500 ft.

SAN FERNANDO—Shell's Mission 2, abn 5690 ft.

RIVERSIDE COUNTY — Hall Pet. Co.'s Watt 1, 23-7-3, fsh for bit 975 ft.

SAN BERNARDINO COUNTY — Western Pacific Oil Co.'s 3, dr hard rock 3350 ft.

SAN DIEGO COUNTY — S. S. Turner's Baler 1, dr blue shale and sand 1610 ft.



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Timken-Equipped for Heavier and Deeper Wells

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ARKANSAS

ASHLEY COUNTY—Texas Co.'s Keiffer 1, 11-18-4, rig up. C. E. Harris et al's Holmes 1, 9-16-7, abn 151 ft, will not drill further.

BRADLEY COUNTY — Ohio Oil Co.'s Southern Lbr. Co. 2, 19-16-9, dr 2620 ft.

CALHOUN COUNTY—Joe Hurley's Ark. Land & Timber 1, 29-16-12, cmtd 6⅝-in csg 2303 ft, td 2314 ft.

CLARK COUNTY—Wm. Henry, Tr's Clark 1, 34-9-21, sd 1385 ft.

CHICOT COUNTY—W. S. Smith's Meyer 1, 14-19-2, sd 850 ft. Joe Crawford's Cashion 1, 14-18-2, ds stuck td 2330 ft.

COLUMBIA COUNTY—G. W. Dawley et al's Fullenwider & Kitchen 1, 12-17-22, sd wo 2847 ft.

DALLAS COUNTY — Robt. H. Dedman's Hillman 1, 20-10-13, temp abn td 1145 ft.

DREW COUNTY—Ohio Oil Co.'s Jerome Lbr. Co. 1, 13-15-4, dk pat.

FAULKNER COUNTY—Gold Creek O. & G. Co.'s Stermer 1, 17-4-13, sd 3462 ft.

FRANKLIN COUNTY — Ozark Nat. Gas Co.'s McElroy 1, 15-8-27, lcn.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-13-19w, fsgh cable tools td 2800 ft.

JOHNSON COUNTY — Ark. Nat. Gas Corp.'s Bynum 2, 12-10-24, rig up. McPherson 1, 10-10-24, dr 1080 ft.

LOGAN COUNTY—Ark. Nat. Gas Corp.'s W. H. Parks 1, 26-8-24, setting 6⅝-in csg, td 3208 ft.

MILLER COUNTY—E. A. Martin, Tr's Dale 4, 23-15-26, dr 2670 ft.

OUACHITA COUNTY — McDonald Bros.' Wilson 1, 25-15-18, fsgh 17 joints d.s., td 2806 ft. Little Fay Oil Co.'s Cannada 1, 24-15-16, set liner 2058 ft, 38 ft br snd will pump. Cannada 2, 24-15-16, dr 650 ft. Chas. McDonald's Wilson 1, 25-15-18, dk.

UNION COUNTY—Carter-Bell et al's Terrell 1, 27-18-14, dr 184 ft. J. P. Hawkins et al's Goodwin 1, 6-17-15, dr 750 ft. Tharpe Drilling Co.'s List 1, 25-17-15, sd 3050 ft. Foster et al's Murphy Land Co. 1, 22-17-17, cemtd 10-in csg 204 ft. Calgo Oil Co.'s Primm 1, 9-18-17, coring 3658 ft. Sam Sklar, Tr's Fitzgerald 10, 8-18-15, setting lin 48 ft br snd td 2190 ft. McDonald Bros.' Mayfield 1, 29-19-15, sd 1990 ft. Grimes Bros.' Hill 2, 7-18-14, rig up wo. J. C. Marcum's DeYambert 1, 5-19-4, wash to bottom of hole 2672 ft. Gulf Ref. Co.'s Gaddy 2, 30-17-14, dr 582 ft. T. J. Woodley 1, 6-18-14, dr 3220 ft.

NORTH LOUISIANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BIENVILLE PARISH—		
W. G. Gray, Tr's Johnson 1, 21-18-6	*	2930
WEBSTER PARISH—		
Magnolia Pet. Co., Scroggins 1, 1-22-11	158	2709

BIENVILLE PARISH — W. P. Wallace's Ashley 1, 15-16-10, tested est 1 mil ft gas, wo td 2005 ft. W. G. Gray, Tr's Johnson 1, 21-18-6, dry, abn, td 2930 ft.

BOSSIER PARISH—Ark. Nat. Gas Corp.'s Tidwell 1, 29-22-11, dr 1500 ft. Big Ben Oil Co.'s Stewart 2, 15-18-12, sd wo 1300 ft. Nell & Lanier's Biedenharn 1, 23-21-14, sd 50 ft. Walker et al's Antrim 1, 28-22-14, sd 2985 ft. John F. Woodman's Bolinger 1, 9-22-11, dk. Magnolia Pet. Co.'s B. M. Cook 1, 2-22-11, lcn. Sallie Coyle 1, 2-22-11, lcn.

CADDO PARISH—D. C. R. Oil Co.'s Hunter Estate 1, 17-19-14, cemtd 10-in csg 86 ft.

CATAHOULA PARISH—Lochnager O. & G. Co.'s Taliferro 1, 26-9-6e, sd 900 ft.

CLAIBORNE PARISH—Dixie Oil Co.'s Gilbert 1, 27-21-5w, ream to bottom td 4719 ft. El Dorado Chief Oil Co.'s Baker 1, 26-20-7, sd 2092 ft. Smitherman & McDonald's Miller 1, 17-23-8, sd wo 4243 ft.

DE SOTO PARISH—P. J. Becker's Tull 1, 23-12-15, lcn. Benedum & Trees' State 1, 22-14-12, coring 2790 ft. Benson O. & G. Co.'s Jackson 1, 3-10-13, rig up. Lake Case, Tr's Boatright 1, 3-10-13, sd rebldg dk, td 1810 ft. Carlton Drilling Co.'s Stephens 2, 12-11-16, cemt 6⅝-in csg 1110 ft, td 1178 ft. R. O. Roy's Sample 1, 1-13-14, set 10-in csg 278 ft. Thorn Oil Co.'s Burford 1, 22-14-14, dr 1800 ft. Warren & Carruthers' Ramsey 1, 33-13-16, dr 2636 ft.

EAST CARROLL PARISH — Palmer Corp.'s Mitchiner 1, 8-19-11e, cemtd 61in csg 2401 ft, top of gas rock.

FRANKLIN PARISH—Davis et al's Moore 1, 12-11-6e, sd 1000 ft.

LINCOLN PARISH—V. E. Shaw's Voss 1, 1-20-3w, rig up.

MADISON PARISH — Mid-American Pet. Co.'s Yerger 2, 51-16-14e, sd 285 ft.

MOREHOUSE PARISH—Rainbow Oil Co.'s Louisville Cooperage 1, 33-22-8e, dk. Woodley & Collins' Harp 1, 22-22-7e, dk.

NATCHITOCHES PARISH—Robline O. & G. Co.'s Cassady 1, 7-8-9w, sd 1100 ft.

OUACHITA PARISH—G. E. Jordan's Wall 1, 12-18-3e, arr re-test 2300 ft, td 3347 ft. Ouachita Nat. Gas Co.'s D'Arbonne B-2, 25-19-2e, sd 3349 ft. Phillips et al's School Fee 1, 16-16-4e, dr 3300 ft.

RAPIDES PARISH — G. E. Silbertson's Willemach 3, 13-5n-4w, sd 2250 ft. Glenmora Pet. Co.'s Fee 1, 1-2n-2w, sd 3850 ft.

RICHLAND PARISH—Richland Operating Co.'s Chapman 1, 19-16-7e, dr 2028 ft. S. C. Wilson's Buie 1, 17-15-7e, sd 50 ft.

SABINE PARISH — W. J. Garnier's Bowman-Hicks 1, 16-7-12, sd wo 625 ft. R. L. Gay, Tr's Bowman-Hicks 2, 14-7-14, dr 180 ft. Sabine Lbr. Co. 1, 13-7-14, dr 2003 ft.

TENSAS PARISH—Enochs et al's Curry 1, 39-11-12e, sd 3583 ft.

UNION PARISH—G. E. Carmatte's Tugwell 2, 21-22-1e, dr 1000 ft. Carter & Wingfield's Clark A-3, 8-23-1e, dk; Hudson 2, 7-23-1e, sd wo 2278 ft; Hudson 3, 7-23-1e, sd wo 2278 ft; Security Trust 2, 7-23-1e, lcn. H. C. McDonald's Union Sawmill 2, 18-23-1e, sd wo 1500 ft.

WEBSTER PARISH—Jones et al's Elkins 1, 33-23-9, temp abn 2690 ft. Magnolia Pet. Co.'s Scroggins 1, 1-22-11, pumping 158 bbls oil 18 bbls sw, td 2709 ft; H. H. Branton 3, 6-22-9, rig up; Denman 1, 1-22-11, dr 1262 ft. Harry Morris' Lewis 1, 15-23-9, sd wo 2902 ft. Northwest La. Gas Co.'s Pinewoods Lbr. Co. 9, 37-23-11, tested show o&g at 2650 ft, dr 3040 ft. Jonh F. Woodman's Boyd 1, 3-22-11, dk pat.

IMPERIAL ROYALTIES COMPANY

Preferred Share Dividends

Imperial Royalties Company will pay its usual monthly dividend of 1½% on its Preferred shares on January 30th, 1929, to shareholders of record January 25th, 1929. This is dividend No. 100. It will also pay its usual monthly dividend of 15 cents per share on its Class A Preferred shares on January 30, 1929, to shareholders of record January 25th, 1929.

IMPERIAL ROYALTIES COMPANY

Common Share Dividends

Imperial Royalties Company will pay a dividend of 1 cent per share on its Common shares on January 30th, 1929, to shareholders of record January 25th, 1929. It will also pay a dividend of 15 cents per share on its Class A Common shares on January 30th, 1929, to shareholders of record January 25th, 1929.

IMPERIAL ROYALTIES COMPANY

(Established April 15, 1920)

Kansas City, Missouri Tulsa, Oklahoma

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FOR over thirty years Biturine has stood the tests of every kind of corrosive condition known; has defied soil acids, alkalis, moisture and electrolysis, on thousands of miles of pipe lines, on ships at sea, water towers, etc.

Today, Oil Industry pipe line operators know Biturine Enamel for its unvarying quality that gives added years of service to pipe lines with a complete protection against corrosive elements. What many pipe line operators do not know is that this exceptionally well "balanced" coating, made from laboratory-tested and field-proved ingredients that insure greatest permeability, resistance, ductility and tensile strength, costs no more in downright protection than ordinary straight petroleum, or straight coal tar asphalt coatings. As proof of this statement we submit as evidence numerous accelerated tests made by engineers to determine which coating was best to use, none of which showed failure of Biturine Enamel even under the most extreme conditions, as well as over thirty years of actual service in the ground.

The New Mechanical Method for coating and wrapping Pipe

A better, mechanically perfect method for coating and wrapping pipe is now available to progressive pipe line operators through Hill, Hubbell & Company's latest contribution to the Pipe Line Industry, a coating and wrapping machine, several of which have been installed in permanent plants near well-known pipe mills. We will gladly send all available data to those who address Box 1483, Tulsa, Oklahoma.

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(Division of General Paint Corporation)

Manufacturers of
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Factories: SAN FRANCISCO and TULSA

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Say you saw it in The OIL WEEKLY

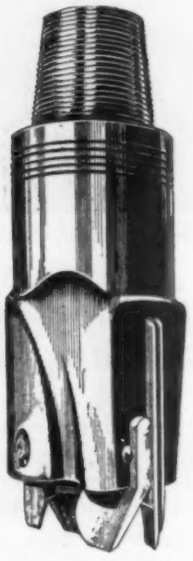
1000 feet—11″ hole 40 hours—cost 3c per foot

K-P

THE LINE OF LEAST RESISTANCE

STRAIGHT HOLE Rotary Drilling Bit

—made this speed and low cost record. A 1000 feet of 11″ hole in 40 hours, passing another well by 100 feet that was started 5 days previously, is the record made by the Klingensmith Drilling Company at Pearson Switch, Okla., with three sets of K-P self-sharpening cutters in a K-P *Straight Hole Bit. This thousand feet cost Klingensmith only $30.00 for K-P self-sharpening cutters.* The total footage was made in three round trips.



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Sold by every "Continental" — "National" —"Oil Well" Supply Company Branch Store.

Venezuelan Tanker Facilities Increased

New York. — Seventy-three shallow tanker fleets were in operation on Lake Maracaibo, Venezuela, on January 1, having a capacity of 1,148,000 barrels. This is sufficient to transport 9,184,000 barrels of oil a month, or an average of about 300,000 barrels daily. The Caribbean Petroleum Company has 33 tankers in service; Lago Oil and Transport Company, 19; Gulf Oil Corporation, 15; Creole Petroleum Company, 3; and Arend Maatschappij, 3. This fleet, operating at capacity throughout the year, would boost exports of Venezuela crude to about 110,000,000 barrels. Production during November, 1928, aggregated 11,291,370 barrels, or an average of 376,379 barrels daily. At this rate, the annual production is at the new high rate of about 137,000,000 barrels. Four major pools, Lagunillas, La Rosa, Ambrosio, and Mene Grande, are producing a total of 212,000 barrels daily.

Many Companies Expect Improved Earnings

New York.—Reports now being made available for the fourth quarter of 1928 indicate that quite a number of the large oil companies will show considerably improved earnings for last year. Among the companies for which improved earnings are anticipated for 1928 are Texas Corporation, with a net estimated at approximately $45,000,000; Standard Oil Company of Kentucky with "substantially improved earnings"; Independent Oil and Gas Company with a net of $3,226,229 for the first 10 months of last year; Prairie Oil and Gas Company with a profit of about three and a quarter million for the first six months, and the prospect of a substantially better showing for the final half of the year, when official financial data is made available; Simms Petroleum Company with a profit of about $330,000, against a deficit of $61,000 in 1927. A report of the Cities Service Company shows that all records were broken for the year 1928, when the net earnings of that company totaled nearly $34,000,000, while an estimate for the Standard Oil Company of Indiana reveals a possible net of $80,000,000 for 1928.

The improved financial position of the oil companies mentioned above reflects the improved market tone which prevailed during the past year, particularly with reference to the gasoline market. Undoubtedly, many more companies will show an improved financial position, when official data is made available. This is particularly true of the major companies that represent a complete cycle in the petroleum industry, producing, refining and marketing.

Record Earnings Reported by Cities Service

New York.—All records of Cities Service Company were broken for both monthly and yearly earnings when net earnings reached $3,242,298 for December and $33,584,465 for the calendar year 1928. The net reported for the year 1928 represents an increase over 1927 of $1,631,000. The net to common stock and reserves amounted to $22,876,754, or 23.98 per cent. on the average of common stock outstanding, which is equal to $4.79 per $20.00 par value share. This is also a new record and an increase of $271,000 over 1927. The Cities Service Company has announced regular monthly dividends of one-half of one per cent. in cash and one-half of one per cent. in stock on the common and 50 cents on the preferred and preference "BB" stocks and five cents on the preference "B" stock, all payable March 1, to stockholders of record February 15.

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and Save the Difference

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475′	5½″	70-lb. used casing
1000′	12½″	50-lb. used casing
2200′	10″	40-lb. used casing
2000′	8″	32-lb. used casing
3800′	6⅝″	24-lb. used casing

We will rent this casing or any other pipe which you may need. Let us finance your operations by carrying your pipe and casing investment for you.

BRANCH STORES
Wichita Falls, Holliday, Vernon, Breckenridge, Texas

EASTERN HEADQUARTERS
Butler, Penna.

Keystone Pipe & Supply Co.

HOLMES BUILDING
FORT WORTH, TEXAS

Saying It With Records!

During the year just past, Pittsburgh Seamless Steel Casing has established three world's records—for 4¾", 6⅞" and 8⅝" sizes. During the same time Pittsburgh Seamless Steel Drill Pipe and Tubing have figured, both separately and together, in a number of surprising service reports. At the end of the year 1929, if you will review the performance records of Pittsburgh Seamless Steel Oil Country Tubular Goods in your own operations, you will find that they have not failed you.

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Safety Work Proves Monetary Value in California

Statistics show steady decline in number of fatal accidents following inauguration of safety education in the fields

By BRAD MILLS
Staff Representative

SAFETY, once regarded by many oil companies as a questionable overhead, has taken its place in California as one of the most important departments in the producing and transportation of oil. Several years ago, even the major companies paid little attention to safety as a separate unit. They realized it was best to be careful, and constantly urged their employes to reduce the causes of accidents, but it was not until recent years that the important subject of safety came into its own. Contrary to a belief, only too prevalent, that the large companies are a cold-blooded lot, it was the major companies that paved the way toward efficient safety work through the organization of full-time safety departments.

The newly-organized safety departments soon made themselves felt by reducing accidents in many ways. They won favor as time went on and extended their activities to all departments of producing and transportation. Much of their work was not original, but they served as an agency to disseminate the many preventive measures found effective by any and all methods.

The Department of Commerce, through the Bureau of Mines, has cooperated closely with the California companies and has used all its resources to drive home the value of safety measures in the oil fields. Its yearly Reports of Investigations, reviewing fatalities in the California Petroleum Industry during each calendar year, is often used as a basis for future operations by the safety departments of many companies. It is also through the publication of these reports that the various companies are enabled to see the effect of their work from year to year.

A steady decrease in oilfield fatalities shows conclusively that the work of the safety departments of the various companies is an asset in more than one way. The saving of human life and the prevention of hundreds of minor accidents have greatly reduced the expense in many ways. When a human life is gone, it cannot be replaced, and while a man is injured, he is non-productive from every standpoint. Hospital and medical bills must be paid, and in two cases out of three dependents must be cared for.

The Bureau of Mines has compiled a table, showing a five-year comparison of fatalities in the drilling and producing fields of California. The table also shows the amount of oil produced each year and the corresponding fatality index expressed in fatalities per hundred million barrels lifted. A decrease is shown in every year. The table follows:

Five-Year Comparison of Fatalities, Drilling and Producing Fields

Year	Number Killed	Oil Production Barrels	Fatalities Per Hundred Million Barrels
1923	59	263,728,895	22.3
1924	44	230,063,117	19.1
1925	31	230,147,342	13.5
1926	26	224,117,013	11.5
1927	26	230,751,463	11.2
Average	37	235,761,566	15.7

It will be noted by the table that accidents decreased sharper during 1924 and 1925 than during 1926 and 1927. There are probably several reasons for this difference. During 1923, 1924 and 1925, safety departments were generally organized, but they had not succeeded in getting the co-operation they received during the more recent years. As safety work progressed, fatalities showed a corresponding decrease. During 1923, the number killed was considerably more than twice the number killed during 1927, even though the same number was killed during 1927 as during 1926. This seeming inconsistency may be accounted for by the fact that safety work had reached almost as high a state during 1926 as 1927. It never will be possible to completely eliminate deaths, although theoretically such a condition is the ultimate goal.

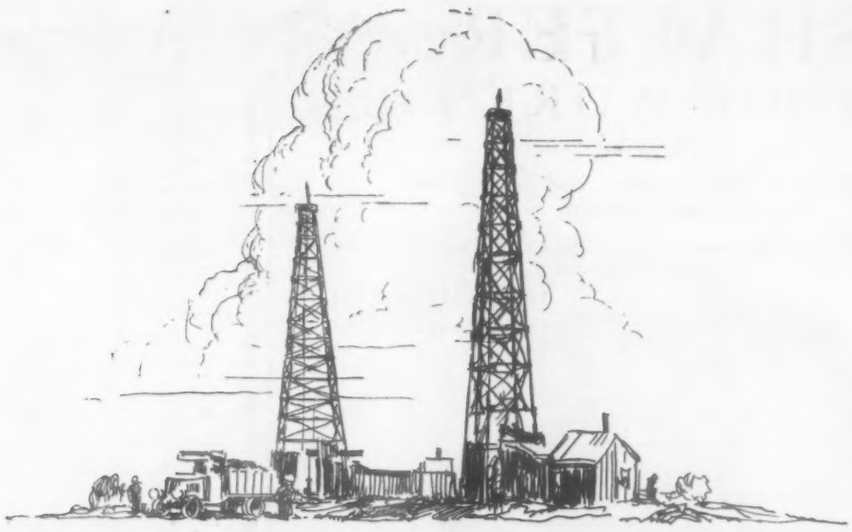
It is especially interesting to note that in only two instances in the drilling and producing divisions were fatalities caused by failure to provide safety devices required in the General Petroleum Safety Orders for drilling and production, issued by the Industrial Accident Commission of the State of California. The safety departments of the various companies were instrumental in bringing about such a satisfactory condition. During 1923, when fatalities were comparatively high, the absence of these safety devices undoubtedly caused a much larger percentage of deaths. When it is considered that four deaths during 1927 were caused by circumstances not typical of oil-field work, but were charged to it because of a slight connection, it will be seen that with 22 fatalities the 1927 record was better than that of 1926.

A mere report of the fatalities of any year is valuable, but the analysis of such reports by the safety departments of the larger companies and the application of preventive measures in a novel way make for the maximum of efficiency. By illustrating the causes of fatal accidents, the workmen have been enabled to avoid similar mistakes. These safety departments constantly are driving home the fallacy of foolish practices and the heads of departments are putting teeth inedicts that those found guilty of breaking safety rules will be immediately dismissed.

The safety departments of the leading California oil companies co-operate closely with the National Safety Council, the Bureau of Mines and other agencies which work for safer conditions in oil-fields, and, in addition, are on the alert to devise original means of preventing accidents.

A brief review of several fatal accidents in California during 1927, as reported by the Bureau of Mines, give an excellent idea of the situation faced by the safety departments of the larger companies. A mere "Be Careful" sign would not apply to the many accidents reported. In many instances, the accidents could have been prevented by following the instructions issued previously by safety departments.

The first fatality shown was that of



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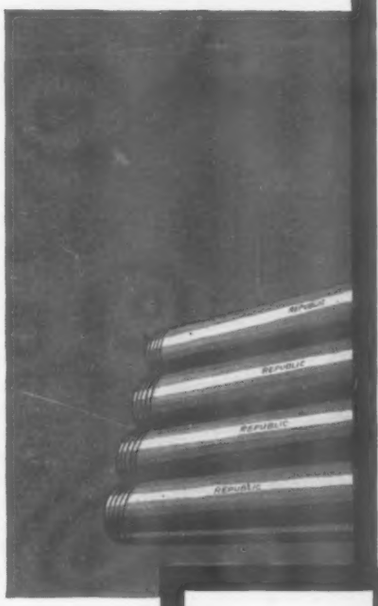

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Because good steel pipe is identified and guarded by the name "Republic."

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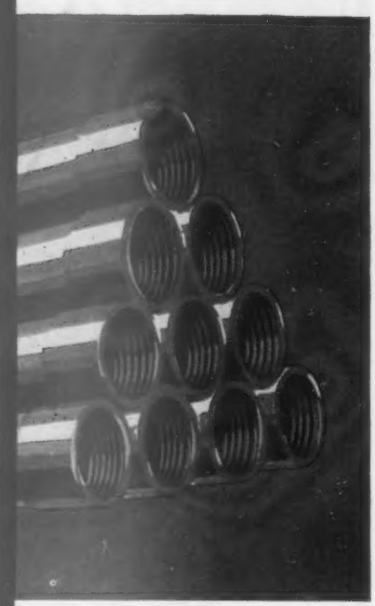

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HOUSTON – SANANTONIO – SHREVEPORT

a rotary helper who was caught and whirled around the cathead when lowering crown block sheaves to the floor of the derrick by means of a 1½-inch endless catline. The line fouled on the cathead, causing the fatal injury to the workman. The Bureau of Mines showed that the logical remedy for the prevention of accidents at catheads is for the operators to equip their rigs with the newly-developed cathead safety or an engine control device that centers the reverse link whenever a rope fouls. Most large operators prohibit the use of the endless catline because of its inherent danger. It was further shown that without the proper equipment, accidents will continue to occur. The necessity of always being "in the clear," by keeping the rope free from kinks and by preventing the end of the rope from piling under the feet of the workmen, was shown. All of these preventive measures are considered by the various safety departments and passed on to the workmen for their individual safety.

Another fatal accident described in the Review of Fatalities during 1927 was that of a well-puller who was killed while running rods into the well. In doing so, the workman was struck on the back of the head when the elevators and rods fell. The elevators hung up in the derrick, causing the elevator links to become disengaged from the sucker-rod hook, and allowing the rods and elevators to fall. The report showed that every year a number of serious accidents were caused by the failure to provide a proper latch to prevent elevators from becoming accidentally disengaged from casing, tubing and sucker-rod hooks.

The complete list of fatalities reported in the resume of 1927 showed deaths from many causes. The slipping of rod elevators from trunnions, the grabbing of a sand reel clutch, the falling of a stirrup from the beam hanger, the collapsing of a rig, the falling of a string of cable tools which had been suspended in the derrick, the dropping of a joint of casing to the derrick floor, the falling of a rod board from a derrick, the falling of a loose timber from a derrick, the slipping of a pump which was being hoisted in a repair shop, three instances of falls from derricks, two of which were while the derricks were under construction and several other instances of fatal accidents were given. Following the report of each accident, there is a discussion of the methods to prevent their recurrence.

The connection between the yearly report of the Bureau of Mines and the various safety departments of the larger companies seems more or less loose until the workings of both are considered. It is on this report that the companies base much of their own publicity. It brings to their attention the

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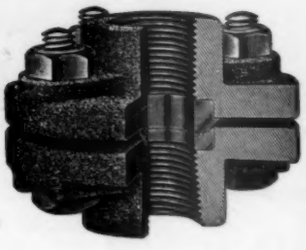

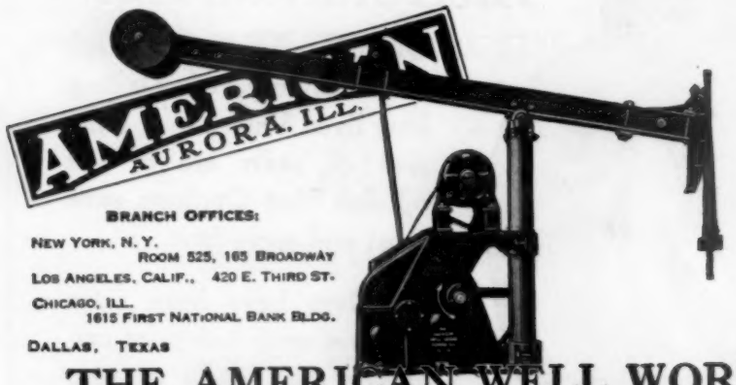

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complete list of fatalities and paves the way for a campaign to prevent similar accidents.

Although the prevention of fatal accidents probably is the paramount aim of the safety departments, the constant drive to eliminate less serious accidents occupies the greater part of their time. This is accounted for by the fact that perhaps a dozen minor accidtnts occur to one fatal mishap.

It seems inconsistent that a workman will deliberately place himself in a dangerous position. It is the duty of the safety department to ascertain why he does it. They have found that the workman virtually stares death in the face perhaps many times daily because he fails to realize what he is doing. It is the ignorance of safety that has made safety departments absolutely necessary. Show the average workman his mistake and he will mend his ways. By continually hammering at safety measures, the habit of practicing safety is generally acquired by the workmen.

The safety departments of the leading California oil companies have placed safety before the oil-field workmen in words and pictures. They have played on his weaknesses, his sympathy and his ignorance. They have shown him what a fool he was when he was a fool, and how he endangered not only his own life, but the lives of others. There are a hundred and one ways in which they have shown him his mistakes. Carelessness causes nearly all accidents, they have shown. The man who sneers at safety is the man with most adhesive tape around his fingers and the man who will learn only by experience—and skin. Fortunately, only a small percentage of workmen are of such a disposition, a survey has shown.

Safety in California has reached a highly organized state—so much so that the head of one safety department has been able to show, in black and white, a saving of over $30,000 in one year.

Controlling interest in the Standard Boiler & Plate Company, Niles, Ohio, has recently been acquired by John H. Warne, former president and general manager of the William B. Pollock Company, and Edgar J. Reilly, former general manager of sales of the same concern.

Plans for adding new equipment to the present plant to diversify steel plate fabrication are completed and rail facilities for handling shipments are being augmented by the new control. Steel plate welding and riveting for construction in steel works is being added to the manufacture of boilers, tanks and oil refinery equipment.

The plant has a main factory building 160 x 375 feet, is equipped with modern boiler shop machinery, and employs approximately 50 men.

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Descriptive Bulletin No. 14N. On Request

Say you saw it in The OIL WEEKLY

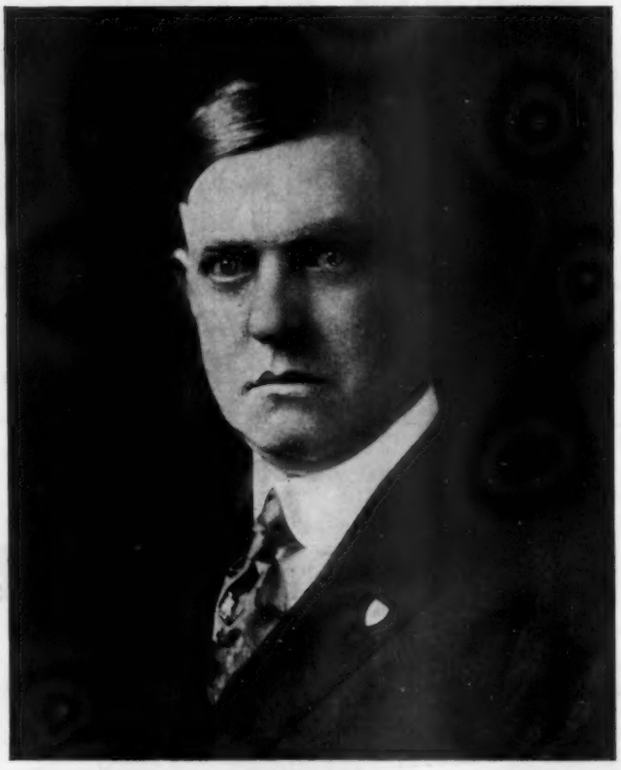
P. C. Jones Remembers First Gas Engine at Corsicana

P. C. JONES, of the S. M. Jones Company, manufacturers of sucker rods, Toledo, isn't an "old man" for a point of age but who qualifies as an old timer in point of experience. He "Kin Remember" the first gasoline engine, or maybe it was oil engine, ever installed in Texas.

It was at Corsicana back in 1897 and the Southern Oil Company bought the engine from Mr. Jones' father, together with power, tubing rods, etc., to pump 13 wells.

P. C. Jones, then a young man working on a rig in the Eastern states, sought permission of his father to install the engine, the first in Texas.

He went to Corsicana, hired some negroes to do the heavy work, set up the power and then with a shiver up and down his spine wondered if it would work. Around the location where the engine was placed was a big herd of cattle, about 1500 in number. Mr. Jones was worried about two things. What would happen to him if the engine wouldn't start and what would happen to the cattle if it did start.



P. C. JONES
President, S. M. Jones Company, Toledo, Ohio

He spoke to the people in charge of the cattle who had never seen nor heard an internal combustion engine operate and told them that the cattle might stampede. They poo-pooed the idea.

With the aid of a husky negro he turned the engine over and it started! With the first "bang" it brought every cow on the ranch to attention head up.

"Bang, bang" went the engine. Up came the tails of 1500 cows and the rush was on. Jones cut off the fuel but the "woof, woof" of the compression completed the scare of the first firing.

The 1500 cows made a clean sweep of every fence in the neighborhood and for sometime thereafter all hands were busy gathering up cows scattered over the end of the country.

This engine, a 25 H.P. Acme—the Acme Power—and some of the Jones Sucker Rods installed at that time are still running on this lease now owned by the Magnolia Petroleum Company.

This was not only the first gas engine and power installed in Texas but the first commercial oil wells ever pumped in in the state.

Just off the press

TEN HUNDRED LAUGHS

By JUDGE RAY SCRUGGS

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P. O. BOX 1307 **HOUSTON, TEXAS**

Plan Development of New Field in Illinois

Harrisburg, Illinois.—Following the test of a discovery well in the new oil field here, which resulted in a showing of 70 barrels in 20 hours, plans are being made for drilling of several other wells on the 25,000 acres under lease in the field.

A rig is being erected for a second well by the holding company which drilled in the discovery well and which has 14,000 acres under lease. Large oil interests are active in the field and it is expected that at least half a dozen other wells will be well under way before spring.

The discovery well is in SW SW, Section 2-10s-6e, and the new location NW NE, Section 11-10s-6e. The latter location is on the opposite edge of the supposed field from the discovery well. Another well tentatively has been located near the discovery well.

The field is located in southeastern southern Illinois, near an extension of the Missouri Ozarks which were said to have been the boundary of the last glacier.

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MAIN OFFICE AND WORKS

WICHITA, KANSAS

Contest Stimulates Lease Efficiency For the Texas Company

Operators on McKie lease in Powell field win in spirited contest despite natural handicaps of age and location of property; looks aid lower costs

By JACK LOGAN
Staff Representative

HOUSTON.—In the present age of big business, with large concerns operating on large scale and characterized by strictly business-like policies and more or less impersonal dealing, it is but natural for an employee to pause occasionally and ask himself: "Am I really getting anywhere?" He will say, perhaps, "I have worked hard and diligently;—but is it appreciated?"

If he really is a meritorious employee, it is obviously to the interest of all concerned—to himself and his organization—that he conclude to his own satisfaction that his work is appreciated. For then he will have an incentive for continuing his efforts.

Of course there are promotions and salary increases which a company may use to show its appreciation to worthy employees. But these rewards are sometimes taken as a matter of course. They are considered as the remuneration for service rendered. And when extraordinary service has been rendered, when a man is doing his job better than the other fellow does it, when he has displayed an unusual amount of diligence and initiative, it is well for him to be made to realize that his efforts are appreciated—whether it be by words of praise or thanks, or some other means.

Realizing this need for expressing appreciation of exceptional service, the production departments of The Texas Company five or six years ago initiated the policy of awarding annual prizes to the foremen and pumpers of the best kept leases. Several weeks ago the prizes were presented to the winners in the South Texas Division of The Texas Company, although the names of the winners had been announced some time previously.

The McKie lease in the Powell field, Navarro County, was the winner of the award; the prizes going to Everett Toole, foreman, and W. E. Ballard, pumper. Each received an expensive gold watch, bearing an engraved inscription showing his name, the year, and the significance of the award.

Following the decision of the winners of the prizes, William V. Bowles, manager of the South Texas Division of The Texas Company, sent then a letter giving them special praise for winning the award, pointing out that the award judges realized that the men on the McKie lease had worked under handicap, due to old equipment, and a location that was bad geographically, being low and washed by water carrying rubbish from higher sections.

In making the awards annually, the judges decide which lease is in the highest state of efficiency, with regard to production, economy, cleanliness and any other factor entering into its operation. Besides the appearance and condition of the property, the cost of operation is considered an important factor. In other words, it is intended that the prizes shall go to the most efficiently and most economically operated lease.

Stated in detail, the factors considered in making the awards are as follows:

1. Maintenance of production.
2. Cost of production per barrel.
3. Efficiency with reference to wells shut down for any cause.
4. Economy in use of small tools and supplies.
5. General cleanliness of property.
6. Accidents to men; fire loss.
7. Economical use of oil and greases.
8. Suggestions for increase of production; decreasing costs.
9. Length of service. Employee must have been with the company for the entire period for which the award was made.

The McKie prize-winning lease is located in a wooded section. Numerous stumps, which had remained on the property as relics of rush drilling in the past, had been burned down even with the ground; and the many trees which remained standing had been white-washed to a height of six feet or so from the ground. The lease impressed one as a place of beauty—a park of some kind rather than an oil field property. There were no scraps of paper, rags, sticks or stones scattered around; no rubbish of any kind.

The engine houses and all other buildings were painted in regulation colors of The Texas Company. Stock and circulating tanks were painted black with a Texaco Star in an appropriate place on each.

All of the rig floors were clean and

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WINNERS IN LEASE EFFICIENCY CONTEST

The Texas Company's McKie Lease, Powell Field, Mexia District, was the winner in the South Texas Division, Producing Department Efficiency Contest, and as a result Foreman Everett Toole (left) and Pumper W. E. Ballard (right) are now the proud possessors of suitably engraved watches, these being the usual awards to the foreman and pumper on the lease declared the best kept and most efficient in the annual contests.

unlittered. No tools and materials were scattered around. There was on hand a 30-day supply of lubricating oil and greases, and no more.

Preparatory to making the award this year, all of the properties of the South Texas Division of the company were inspected by the committee of judges, consisting of Division Manager, William V. Bowles; Division Superintendent Paine Pannill; and the following District Superintendents: E. A. Barker of the Boling and Big Creek district; L. E. Bales of the Hull district; O. W. Biggs of the Humble district; F. L. Hugus of the Mexia, Powell and Wortham district; H. G. Shook of West Columbia; and M. Westbrook of Liberty and Sour Lake.

Following the inspection, each judge sent in his first and second choices for the prize lease by secret vote; and an election judge in the Houston office tabulated the selections, deciding the winner. If there is a tie in first choices, the second choices are figured in.

To what extent the annual awarding of these prizes affects the operation of the properties of The Texas Company cannot be determined, of course; but the officials at the head of the producing department are of the opinion that it is a worth-while stimulus for better work. At any rate, The Texas Company is frequently and freely complimented on the attractive appearance of its leases, and the efficiency with which they are operated is apparent.

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Naramore Vice-President Pettigrew & Meyer

New York.—Chester Naramore, who has been with the Sinclair Consolidated Oil Corporation since 1920, has resigned to become vice-president of Pettigrew and Meyer, Inc., 120 Broadway, this city.

Pettigrew and Meyer, Inc., controls and operates the following concerns: Homaokla Oil Company, Oklahoma City, John E. Dickson, president; Reiter-Foster Oil Corporation, Tulsa, Paul S. Ache, president; Argo Oil Company, Denver, Arthur Johnson, president; Pandem Oil Corporation, Wichita Falls, Texas, Ben Bell, president; Petro Royalty Corporation, Tulsa; and The Petroleum Research Corporation, New York City. It also controls the two investment trusts, Oil Shares, Inc., and Petroleum Securities, Inc., both of New York City.

Officers of Pettigrew and Meyer, Inc., include J. Meyer, Jr., chairman of the board; Todd M. Pettigrew, president; H. K. Tobias, vice-president in charge of the New York office; and Chester Naramore, vice-president in charge of field operations out of New York. All these officers have their headquarters at 120 Broadway.

The two investment trusts have in excess of $15,000,000 of cash as paid in capital, with the corporate structures of the trusts providing for an aggregate total of more than $80,000,000.

E. O. Gilbert, who has been with the land and geological department of the Mexican Gulf Oil Company at Tampico, has been transferred to the land and lease department of the Gulf Production Company, Houston. Mr. Gilbert has spent several years in Mexico, and before his service there, was employed by the Gulf Production Company in the North Texas division, with headquarters at Fort Worth.

Build Carbon Black Plant in Richland Field

Shreveport, La.—Entry of the carbon black manufacturing industry into the Richland Parish gas field was announced during the last week.

The Richland Carbon Company, recently organized with a capitalization of $250,000 will start the construction soon of the first of a four-unit plant for manufacture of carbon black, utilizing Richland Parish gas. Twenty million cubic feet daily will be consumed. A gasoline absorption plant will also be operated in connection with the project.

Heretofore carbon black manufacture in Louisiana has been confined almost entirely to the Monroe gas field, with one plant at Greenwood, Caddo parish, using Waskom gas.

Under a recent ruling of the courts the Minerals Division of the State Conservation Commission cannot refuse a permit for carbon black manufacture. Several stiff fights on the industry on the grounds that it depleted the state's natural resources had been waged in the past, especially on the location of the unit at Greenwood. However, Richland Parish citizens were reported anxious to secure a project of this kind.

Stockholders of the Richland Carbon Company are: S. R. Humble, J. A. Hale, J. A. Hemlar and W. C. Feazel. New Orleans capital is also said to be interested in the plant.

WANTED — A high-class executive familiar with oil field equipment in Mid-Continent field. Must be mechanical engineer. Only high-class salesman need apply. Address Box 562, care Oil Weekly, Tulsa, Oklahoma.

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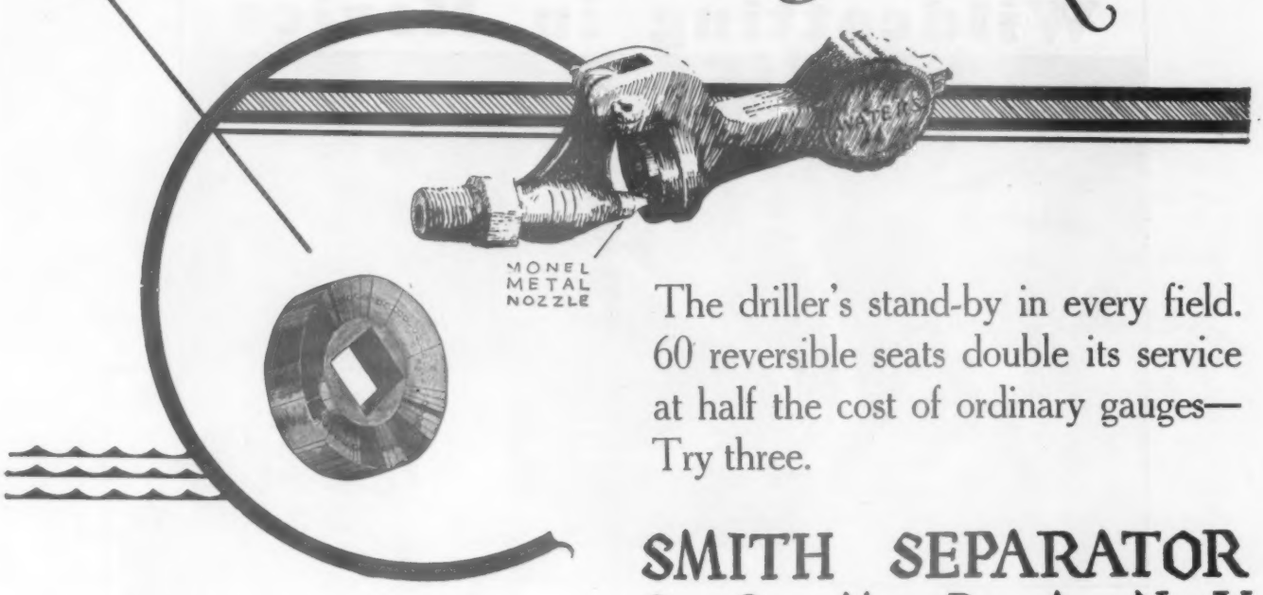

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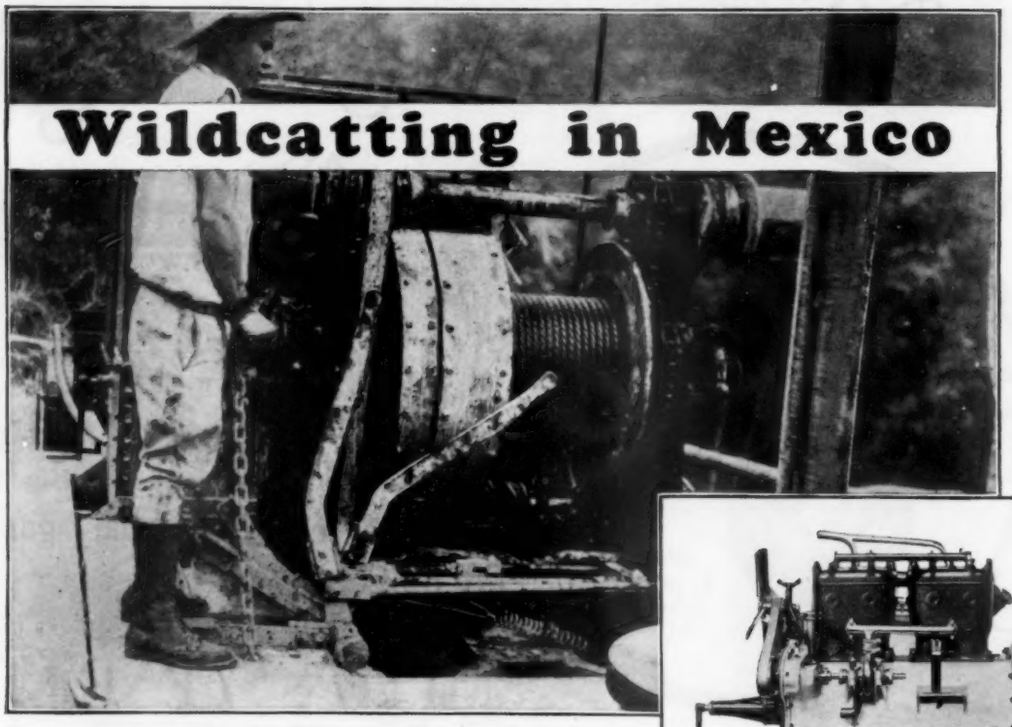
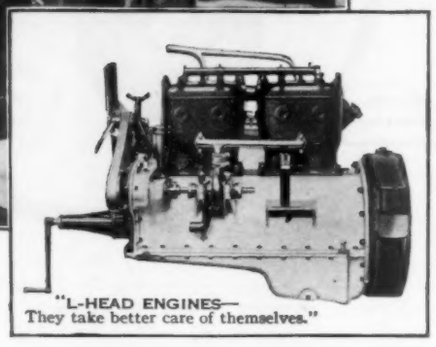
Wildcatting in Mexico



This machine was designed for drilling 2500-ft. holes and it has more than come up to expectations.



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They take better care of themselves."

WEIGHING less than six tons this Sheldon D Machine, powered by a Waukesha 60 hp. engine, drilled 4160 feet—set 12½-inch diameter surface pipe—2700 feet of 6⅝-inch diameter casing and drilled the last 750 feet in limestone with rock bits all within 40 days' time. And this record was made at a tremendous saving in the cost of fuel and transportation.

Waukesha oil field engines are built in sizes up to 300 hp. to meet each oil field production requirement with the size most economical. The engines are readily portable and do not require elaborate foundation or enclosing buildings for mounting or protection.

904 *OIL INDUSTRY EQUIPMENT DIVISION*

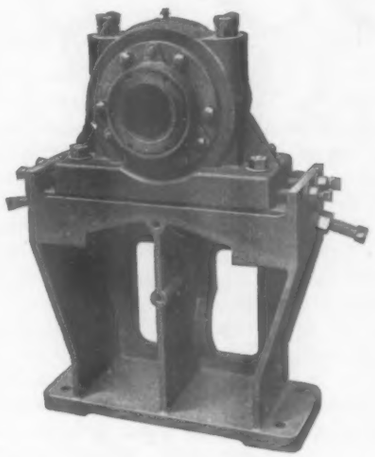
WAUKESHA MOTOR COMPANY

New York Tulsa **Waukesha, Wisconsin** Houston San Francisco

Exclusive Builders of Heavy-Duty Internal Combustion Engines for Over Twenty Years

Say you saw it in The OIL WEEKLY

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS



Reid Pillow Box

Timken Equipped Pillow Box

JOSEPH REID GAS ENGINE COMPANY

An accompanying illustration shows the Reid Timken Bearing equipped pillow box manufactured by the Joseph Reid Gas Engine Company, Oil City, Pennsylvania. It is designed particularly for oil field service on reverse and one way rig shafts, countershafts and similar installations, and consists of two Timken roller bearings mounted on a steel sleeve. The tube is threaded and slotted at both ends. Two clamps screw on either end of the sleeve and clamp it firmly onto the shaft. Easily removable guards cover the clamps.

The sleeve and bearings are fitted into an accurately machined cast iron retainer, outside of which is a spherical section and fits into surfaces, permitting the bearing to be self aligning. Two adjusting plates hold the bearing in place and thin metal shims between the plates and the retainer provide means for the necessary adjustment.

The chief purpose of this unit is the elimination of friction and reducing to a minimum lubrication costs. To install the bearings, the complete assembly may be slipped over the shaft to the proper location or the cap may be removed and the retainer with bearing slipped on the shaft to the proper location and the cap replaced.

Reid pillow blocks can be furnished for 4¼- or five-inch diameter shafts.

Further information may be secured by writing the company headquarters.

Chicago Pneumatic Tool Company, 6 East 44th St., New York, N. Y., Bulletin No. 774, (first edition) covers the CP Diesel Engines, type RH 40.

An illustrated general description is devoted to compression pressure, fuel injection, governing, combustion, lubricating system and starting. A detailed discussion on construction takes up the base, crank shaft, main bearings, frame, connection-rods, pistons, cylinder and cylinder heads, inlet and exhaust valves, fuel pumps, camshaft, gearing, governor, air starting valve and gear, control shaft, injection nozzle, fuel filter, auxiliary fuel pump, and materials.

Aside from photographs, the new type engine is simply illustrated with diagrams, and tests are recorded in tabular form to give the reader the work in detail.

New Vulcan Superior Vice

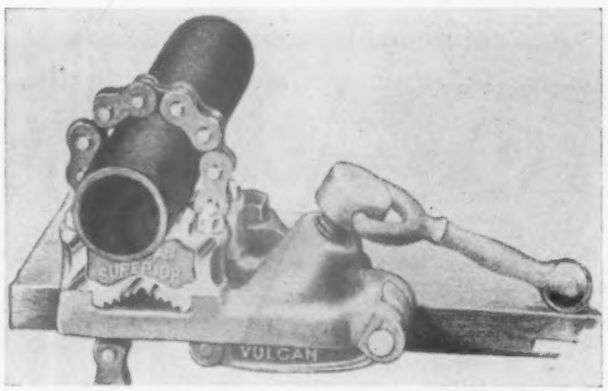
J. H. WILLIAMS & COMPANY

J. H. Williams & Company, Buffalo, New York, has recently placed on the market its new Vulcan Superior vice, which is furnished in two sizes for one-eighth-inch to four and one-half-inch pipe. The manufacturers state that each Vulcan Superior vice takes pipe one-half-inch larger than their other chain pipe vices of similar size.

The leading feature of the new vice is overhead adjustment, with the handle on top where it is easy to operate. A second feature of importance is the reversible jaws for longer life, enabling the user to unscrew the bolts and turn the jaws over when the first teeth in use bagin showing wear.

The new Vulcan Superior vice is made from tough wrought steel, and no castings are used. It has the drop-forged base, jaws, handle and chain-arm. The chains are of the same quality as those of the established Vulcan chain pipe tongs. The new vice is guaranteed against breaks, is compact, rapid in action and positive in grip.

Literature describing the product in detail will be furnished upon request to J. H. Williams & Company.



Vulcan Superior Vice

Ingersoll-Rand Company Increases Distributing Facilities

Ingersoll-Rand Company has increased its sales and service facilities in the Oklahoma territory by opening a direct branch at Tulsa. Tracy L. Clark, recently of the general sales department in the New York office, is the Tulsa manager. After April 1, quarters will be occupied in a new building being erected at Detroit Avenue and Brady Street. In the meantime, business will be conducted from 607 McBirney Building.

The Tulsa branch will be a complete unit, including sales, service, and warehouse facilities. The location of the new building is on the M. K. & T. Railroad tracks. The quarters will consist of 14,000 square feet of floor space. Compressors, pumps, and other machines for the oil fields will be stocked, as will pneumatic tools, rock drills, paving breakers and other equipment for general industrial service. Special attention will be given to servicing machines in use. A complete stock of spare parts will be carried.

The Tulsa branch is the thirty-first direct branch of Ingersoll-Rand in this country, and is the fifteenth to be established

in the oil fields. It is the second office in Oklahoma, the other being at Picher. A branch was established at Houston on January 1.

Ingersoll-Rand Company's association with the oil producing industry dates back to 1902, at which time the first high-pressure compressors ever built for air-lift pumping of wells were furnished to numerous properties in Texas, Kansas, and other sections. The occasion was the sudden cessation of flow by the wells, an occurrence that was attributed at the time to the eruption of Mount Pele. There arose an immediate need for compressors, the demand being so great that in some instances they were shipped to the oil fields by express at costs reaching as high as $2800 per unit.

The company is now one of the largest producers of belt-driven compressors for oil field service. Compressors for steam and electric drive have been standard for many years, and two models of direct connected, gas engine-driven compressors have recently been placed on the market.

Loomis Oil Well Control Company has recently formed a subsidiary corporation operating under the name of Aeronautical Distributors, Inc., with address at 568 East Willow Street, Long Beach, California, which company is acting as sales distributors for the Spartan airplane in California and Arizona. The Spartan Aircraft Company is located at Tulsa, Oklahoma, and is backed by W. G. Skelly of the Skelly Oil Company.

The Loomis Oil Well Control Company sponsored by the Martin-Loomis Corporation, developers and marketers of the Martin-Loomis Weight Indicator and other special equipment for the petroleum industry. Martin-Loomis Corporation is now located at 2827 Cherry Street, Long Beach, California.

Aeronautical Distributors, Inc., has leased a 25-acre flying field at 2801 Clyde Avenue, Los Angeles, where it has its six-plane hangar and show rooms.

Spartan Aircraft Corporation has increased production at its Tulsa plant as the result of wider distribution of its ships and the growing popularity of the Spartan models.

Enlarge Texrope Stock

In view of the increasing demand for immediate shipment of transmission machinery, the Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin, has enlarged its stock of Texrope drives up to 50 horsepower. In 1927 an announcement was made that Texrope drives from two to 15 horsepower were being carried in stock ready for immediate shipment. This stock of Texrope drives has been increased to include all the popular motor speeds and ratings up to 50 horsepower with a large choice of driven speeds in a range of ratios from 1:1 up to 7:1.

A catalog has been prepared to make selection of a suitable Texrope drive a simple matter. The manufacturer of Texrope drives for stock has brought on quantity production with accompanying economies and low prices. Copies of the catalog may be had by addressing the company.

W-K-M Salesmen Meet

Houston.—Preparatory to launching an intensive campaign for greatly increased distribution of its products in 1929, the sales staff of the Oilfield Equipment Division of the W-K-M Company, Inc., was called to Houston for a three-day sales conference extending from January 3 to January 5, inclusive.

Two days of the conference were devoted to detailed study of recent improvements incorporated in older lines manufacturned by the company, as well as operation and maintenance of several new lines of equipment recently introduced to the oil field trade. The third day was devoted to ways and means of coordinating activities, adjustment of territories, outlining a comprehensive sales and service program for the new year, and miscellaneous sales matters.

Reports from all territories covered by the field staff of the company, ranging from Louisiana on the east to California on the west, indicate that sales conditions will be fully equal to those prevailing during 1928, with prospects for considerable improvement.

Officers of the company participating in the sales conference were: Fred McManis, president; L. O. Koen, vice-president; D. J. Bryant, secretary-treasurer; Paul T. Putnam, sales manager Oil Field Division; Wm. D. Herb, assistant sales manager; P. G. Taylor, advertising manager; J. E. Hoffoss, field and experimental engineer; Lee Hewitt, assistant superintendent in charge of shops.

Field salesmen who attend the conference were: T. C. Hendricks, Homer G. Knight, Bert L. Ligon, Russell Moore, H. F. Ryan, G. C. Ross, Homer F. Thornhill, W. L. Martin, H. V. Frazee, Clif Moore. Other members of the staff who could not attend for territorial reasons: T. L. Putnam, export manager, and G. M. Stewart, New York; C. D. Skipworth, Denver; F. B. Dilley, Los Angeles.

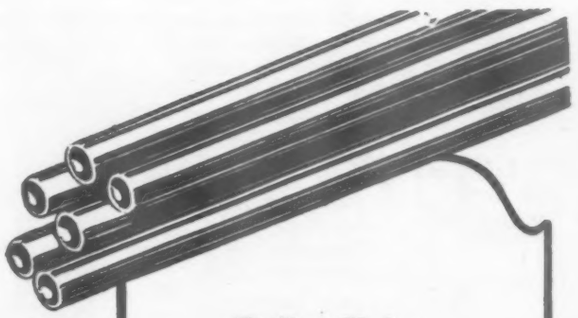
Left to right, top row: W. L. Martin, special representative in charge Field Demonstration; Tom Hendricks, West Texas; Homer G. Knight, Southern Oklahoma and Central Texas; Bert L. Ligon, North Texas; Homer F. Thornhill, special representative, Field Demonstration; P. G. Taylor, advertising manager; J. E. Hoffoss, field and experimental engineer; D. J. Bryant, secretary of the company. Bottom row: Russell Moore, Ranger District; G. C. ("Red") Ross, Seminole District; H. F. ("Mike") Ryan, Tulsa and Northern Oklahoma; Wm. D. Herb, assistant sales manager; Harry V. Frazee, Louisiana and Arkansas; Paul T. Putnam, sales manager.

ASCO STEEL
STANDS SUPREME

Every step in the production of Asco Steel is watched closely. From the selection of the raw materials to the finished product, the first thought always is to produce a steel that will give the best results to the makers of Oil Well Tools. Can we help you to produce better tools?

DISTRICT OFFICES:
503 Phil Tower Bldg., Tulsa, Okla.
541 McCormick Bldg., Chicago, Ill.

THE ANDREWS STEEL CO
NEWPORT KENTUCKY



TYLER

Boiler Tubes

Charcoal Iron
for bad water conditions—

Lapweld Steel
for good water conditions—

For long tube life.

The Tyler Tube & Pipe Co.
Washington, Pa.

Texas Stock—Harrisburg Pipe and Pipe Bending Co., Houston, Texas

Oklahoma Stock—Harrisburg Supply Co., Tulsa, Oklahoma.

DU PONT
REG. U.S. PAT. OFF.

EXPLOSIVES FOR SHOOTING SALT DOMES

WITH an experience of 126 years in the manufacture and application of explosives for all industrial purposes, we can supply the particular kinds of high explosives especially adapted to shooting the salt domes located in the southwestern oil fields.

Your requirements for explosives can be filled with products unexcelled for superiority of quality and efficiency of performance.

Prompt shipments are assured from plants equipped for adequate production of explosives for salt dome shooting.

E. I. du Pont de Nemours & Co., Inc.
Explosives Department
WILMINGTON, DELAWARE

Branch Offices:
Arcade Building,
Saint Louis, - - Missouri

Brown-Marx Building
Birmingham - - Alabama

CUT COSTS
IN DRILLING WITH
APPLEMAN GUMBO BIT

MANY of the most progressive and efficient oil companies and operators have found that the APPLEMAN GUMBO BIT is a VERY IMPORTANT ECONOMIC FACTOR IN THE OIL INDUSTRY. This bit, because of the new principles designed into it, cuts drilling costs considerably. 1. SELF SHARPENING CUTTING EDGES. Front edges hard surfaced permitting wear on back to retain cutting edges. This also gives decided cutting effect on the side wall of the well rather than the scraping action of the average fish-tail. 2. GIVES THE EFFECT OF A SHORT SHANK BIT WITHOUT IT BEING A SHORT SHANK BIT. No whipping action. A steadier boring bit.

(Patent Applied for)

APPLEMAN GUMBO BITS SO PERFECTLY DRILL THE HOLE that seldom, if ever is it necessary to ream. Ask the many big company users in wells of 3600 feet and over.

DRILLING SPEED CUTS DRILLING COSTS

Write, Wire, or Phone for information. A new descriptive folder with prices ready for immediate mailing to you. DROP US A LINE AND GET IT NOW.

B.K.APPLEMAN

BEAUMONT, TEXAS

SQUEAKS FROM THE BULL WHEEL

Verna: Why wouldn't you go to the masquerade with him last night in Hawaiian costume?

Leta: Well, I found out he was going as a harvest hand!

The Oil Weekly is called on for information of varied kinds daily. Questions ranging from requests for data as to where the next big oilfield will be, to "can you tell us where Red Rinnels is, last heard from at Borger" are a regular matter of routine, but John Tucker of the Gulf Production Company took the cake last week when he called us up and asked us if we could put him in touch with a monkey and a grind organ!

"Darling," he cried, covering her little hands with kisses, "can't you see that I love you?"

"Well," she said, "I should hate to think this was just your way of behaving in company."

"My gal," he said, "is a decided blonde."

"Yes," said another girl. "I was with her when she decided."

"I knew your first husband—a fine man—he died too soon."

"That's what my present husband says."

Doc: "Do you sleep on the flat of your back?"

Patient: "No, the back of my flat."

He: "Do you believe that kissing is infectious?"

She: "I don't know. I've never—"

"You've never been kissed?"

"No; I've never been ill."

First Burglar: "Come on, Lefty, let's figure up what we made on this haul."

Second Burglar: "I'm too tired. Let's wait and look in the morning papers."

Two lonesome skunks by the roadside stood,
As an automobile rushed by;
It left an odor far from good,
A tear was in one's eye.

"Oh, why do you weep," said one of the skunks,
"Oh! Why do you wail and quake?"
"Because that smell," said the other skunk,
"Is like mother used to make."

My ancestors came over in the Mayflower.

It's mighty lucky for you they did, for the immigration laws are much stricter now.

"Pa," said Clarence, "what is a superhuman?"

"He's one, my son," replied his dad, "who still can think of it as a pleasure while changing a tire in a pouring rain."

Do you play golf vit knickers?
No, vit white people.

"Half the City Council Are Crooks," was the glaring headline.

A retraction in full was demanded of the editor under penalty of arrest.

Next afternoon the headline read: "Half the City Council Aren't Crooks."

An Irishman came into the office of the president of the Illinois Central Railroad one morning and said: "Me name's Casey. Oi worruk out in the yar-rds." Then he paused before saying: "Oi'd like a pass to St. Louie."

"That is no way to ask for a pass," said the president. "You should introduce yourself politely. Come back in an hour and try it again."

At the end of the day back came the Irishman. Doffing his hat he inquired, "Are yez the man I seen before?"

"I am."

"Me name is Patrick Casey. Oi've been workin' out in the yar-rds."

"Glad to know you, Mr. Casey. What can I do for you?"

"Oi've got a job an' a pass to St. Louie on the Wabash. Ye can go to hell."

"Are you sure these field-glasses are high-powered?" asked the potential customer.

"Madam," replied the ambitious salesman, "when you see these glasses anything less than ten miles away looks like it's behind you."

An Englishman was visiting this country for the first time, and as he was driving along the highway, saw a sign "Drive Slow. This means YOU!"

The Englishman stopped in surprise and exclaimed. "My word! how did they know I was here?"

I've got a freak over on my farm. It's a two-legged calf.

I know it. He was over to call on my daughter last night.

A colored woman presented herself at a registration booth with the intention of enrolling and casting her first vote in the ensuing election. She gave her name, her address and her age; and then the clerk of registration asked this question:

"What party do you affiliate with?"

The woman's eyes fairly popped out of her head. "Does I have to answer dat question?" she demanded.

"That is the law," he told her.

"Den you just scratch my name offen de books," she said. "Ef I got to tell his name I don't want to vote. Why, he ain't got his divorce yit."

Jack acquires a mustache
'Neath his frivolous beak;
Getting it on the installment plan
A little down each week.

"Have you no chivalry?" demanded the indignant female.

"No, ma'am," replied the insulting male, "I traded it in on a Chrysler."

COMBINEX

A Steelex Seat and a Bronzex Ball designed for use in wells where lodestone is present. Stands up and performs! Just try one.

The Chas. N. Hough Manufacturing Co.
FRANKLIN, PENNA.

Products That Cut Down Your Underground Overhead

a Positive Road to Greater Profits in 1929

No Promise No Gamble but a guarantee

While we *guarantee* the NO-CO-RO Drop and Seat to outlast and out-perform any two balls and seats you have ever used, actual records indicate a much higher savings.

Thus, one superintendent used the Drop and Seat *six months* without replacement in a group of wells that formerly required twenty-four balls and seats a month; another installed them in January and during July reported that they were still working properly; still another received eight months' service in a well that required *weekly* replacement before.

It stands to reason, therefore, that regardless of general conditions you assure yourself of *greater profits* in 1929 by adopting this revolutionary improvement in valve check design. Your order, sent to anyone of the addresses given below will receive prompt and careful attention.

NORRIS BROTHERS, Inc.

Robinson, Ill. **Ft. Worth, Texas**

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Gulf Refining Company

OKLAHOMA
TEXAS
LOUISIANA
Refiners of **PETROLEUM**

GASOLINE
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Red and Pale Paraffine Oils

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Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Giraud Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas.
Galveston, Texas

"I'll say they're good couplings"

"In all the years I've used 'em I never found a Harrisburg Coupling that didn't rate a 100% mark for dependability, efficiency and all 'round satisfaction.

"And I'll bet any other Harrisburg user you talk to will say the same thing."

"Here's how they're made"

"From ladle to ingot, then on to plate or billet, to cylinder and finally to finished coupling—every operation takes place in Harrisburg's own plant, under the watchful eyes of Harrisburg's thoroughly experienced and specially trained supervisors.

"In owning and operating its own open hearth furnaces, rolling mills and forge shops Harrisburg completely controls *every* phase in the making of these widely used couplings. And that's a real advantage to all their customers!"

HARRISBURG PIPE & PIPE BENDING CO.

HARRISBURG, PA.

Fully equipped with Our Own Open Hearth Furnaces, Rolling Mills and Forge Shops.

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Harrisburg Supply Co., Tulsa, Oklahoma
George J. Hausen, Inc., San Francisco, Los Angeles and Taft, Calif.

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FORGED SEAMLESS STEEL COUPLINGS

37 YEARS OF INTEGRITY

built into every

Axelson Pump & Sucker Rod

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